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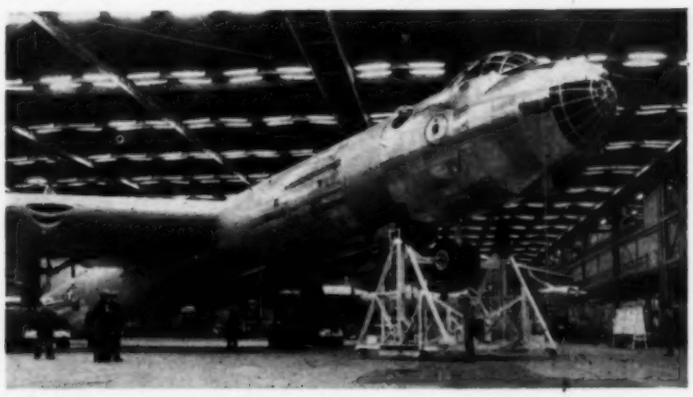

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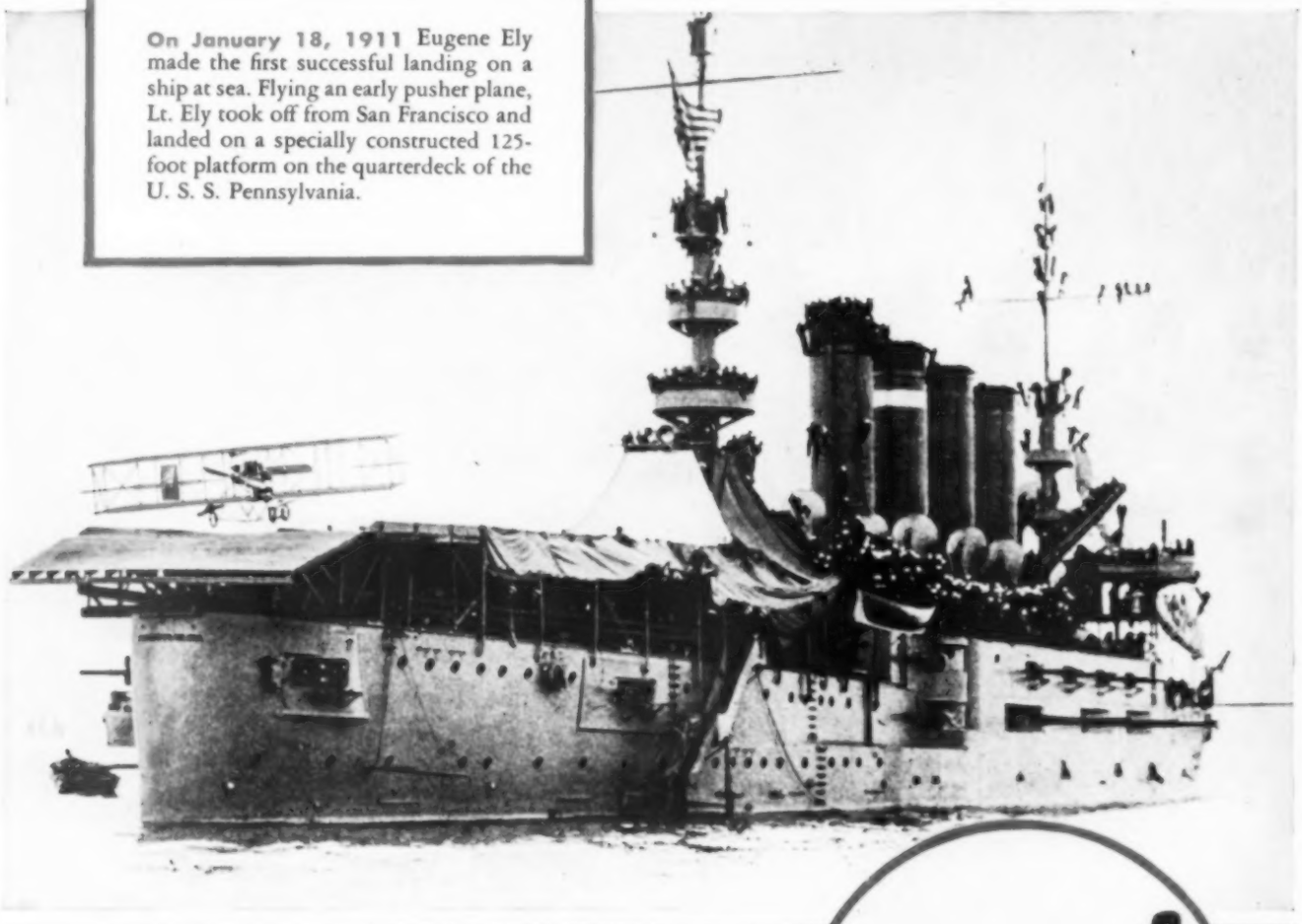
continuous modifications, USAF training developments, and changes in

FIRST LANDING ABOARD SHIP—1911

On January 18, 1911 Eugene Ely made the first successful landing on a ship at sea. Flying an early pusher plane, Lt. Ely took off from San Francisco and landed on a specially constructed 125-foot platform on the quarterdeck of the U. S. S. Pennsylvania.



Today's carriers range far and wide around the world. Here, a U. S. Navy Skyraider comes in for a landing aboard one of our ships off the coast of Korea.

Eugene Ely's pioneer landing aboard the U. S. S. Pennsylvania was the beginning of shipboard aviation. Although years were to pass before the U. S. Navy commissioned its first aircraft carrier, the Langley (converted from a collier), Ely's flight marked the dawn of a new era in naval strategy and tactics.

Phillips Petroleum Company, pioneer in the field of special aviation gasolines and lubricants, has long been one of the country's largest suppliers of aviation fuels for military and commercial use. And now Phillips is ready with new fuels for turbo-props and jets, in addition to its tremendous capacity for producing 115/145 grade aviation gasoline.

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Phillips 66

AVIATION PRODUCTS

AVIATION GOES TO WASHINGTON THESE DAYS, as the picture indicates. Shown are light aircraft manufacturers and government officials who met last month in the city on the Potomac to discuss the mobilization. Left to right are W. T. Piper of the Cubs; John P. Gaty, Beech Aircraft general manager; J. J. Mitchener, Jr., NPA Aircraft Section chief; Del Rentzel, Undersecretary of Commerce for Transportation and ACC chairman; George E. Haddaway, General Operations Division (non-carrier aviation) Civil Mobilization Planning director; G. R. Gaillard, CAA Office of Aviation Defense Requirements director; J. Parker Van Zandt, deputy, and Clayton L. Burwell, special assistant, Office of the Assistant Secretary of Navy for Air.
—(Aircraft Industries Association Photo.)

AIR Report
Significant Trends and News

MANUFACTURE OF 3,500 LIGHTPLANES PER YEAR INSTEAD OF ABOUT 2,500 AS CURRENTLY AUTHORIZED has been approved by the Air Coordinating Committee. It will recommend to the Defense Production Authority and National Production Authority that priority assistance be authorized to assure a production schedule for the manufacture of industrial, agricultural and executive-type aircraft at a minimum level of 3,500 planes annually. This had been urged by the recent report of a special "task group" of civil aviation leaders.

WASHINGTON SPECULATION OVER "CUB-KILLER" MINIATURE FIGHTERS was revived by recent demonstrations by Beech Aircraft of its T-34 Mentor trainer equipped with two machine guns and some rocket racks. Temco long ago demonstrated its T-35 Buckaroo trainer equipped with machine guns. Al Mooney has demonstrated a Mooney single-seater armed as a miniature fighter. All this sales effort at manufacturers' own expense stems from idea that ground forces could use armed liaison planes. However, fighter aircraft are responsibility of USAF, not ground forces.

CONGRESSMEN REVEALED NO SECRET IN REPORTING ONLY 87 B-36 SUPER BOMBERS IN READINESS with another 60 or so being modernized. Reason for shortage is continued and sometimes irresponsible attacks by Navy-inspired critics aimed at B-36 program during recent years. At one time B-36 production was virtually halted and threatened with abandonment. In fact, one of the allegedly "shocked" Congressmen who "revealed" the shortage of planes is the same Congressman who has viciously attacked the B-36 program all along and is partly responsible for delays in production. Other reasons for delay: B-36 has been plagued with continuous modifications, USAF training developments, and changes in power plants. Converted B-36's reportedly cost $6,000,000 each but new-production versions incorporating latest revisions cost $3,500,000 each. . . . **B-36 FACTORY EMPLOYMENT AT FORT WORTH** now totals more than 30,000 persons, virtually as many as were worked at peak of World War II production in 1943. Four months after VJ Day, only 6,400 were employed. Most of the build-up occurred only recently.

RUSSIAN COMBAT AIRCRAFT OUTPUT THIS YEAR WILL EXCEED AMERICA'S BY 300 PER CENT, according to National Commander Erle Cocke, Jr., of the American Legion. He says Russia is building 12,000 planes this year, including 10,000 fighters and bombers, while the the U. S. is building only 4,500 planes, of which only 3,000 will be fighters and bombers. "Incredible fact," says the aroused commander, "is that America today is at best a second-rate air power." ★ ★ ★

FLIGHT MAGAZINE
Including SOUTHERN FLIGHT and MODERN AIRPORTS

AUGUST, 1951 VOL. 36, No. 2

COVER: Short-field excellence of the new Piper L-21 liaison airplane for the Army Ground Forces is demonstrated by the take-off shown on the cover. Piper Aircraft is producing a quantity of the new model, plus some new L-18-C's. The L-21 is powered with a 125-hp. Lycoming and will leave the ground with a full military load in only 270 ft., and clear a 50-ft. obstacle in only 510 ft. It is basically the same airplane as the Piper Super Cub PA-18, which holds the world altitude record for aircraft weighing up to 2,200 lbs., having reached a 30,203-ft. altitude. The L-18-C is a 90-hp. model of the same airplane.
—(Piper Aircraft Photo.)

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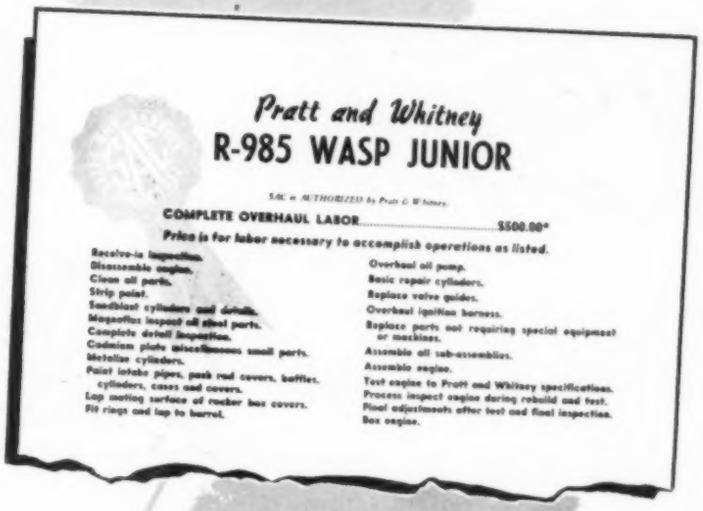

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EDITORIALS

WHILE ROME BURNS

THIS magazine has consistently pointed out that one of our most serious deficits in the defense effort lies within the area of flight training, including the rapidly diminishing supply of competent flight instructors, flight training establishments and the failure of the military services to encourage the production of new-type trainer craft. It's high time we faced the issue squarely and quit dodging it. A part of the responsibility for the alarming deficit belongs to the military while another major portion must be charged to Congress.

Rusting away in the House Armed Services Committee, for example is legislation designed to modernize and make effective college ROTC programs for the Army, Navy and Air Force. Senate Bill 325 and House Resolution 1168 would equalize benefits for potential reservists of the three services during a useful training period in college and would provide varying assistance to the student depending on the extent of his commitment to the government for subsequent service.

One of the most important provisions of this legislation is to fulfill the requirements of the services for junior officers to serve on extended active duty. Students would be required to complete a course of training leading to a baccalaureate degree, to accept a Reserve commission if tendered and to serve on extended active duty for two or three years if they had received flight training. The student would receive his tuition, fees, flight instruction, if required, and laboratory expenses at the university up to $600 per year per student and an allowance not to exceed $50 per month for a maximum of four years, except while at summer camps, when he would receive the pay of the lowest enlisted grade.

Although the flight training provisions of the modernized ROTC legislation are desired primarily by the Air Force and the Army, the Navy is understood to favor the proposals. All of the principal educators of the nation, including Stassen, Sproul and Eisenhower, when he was president of Columbia University, are on record favoring the legislation. It's one of those cases where everyone is for it but nobody in Congress will carry the ball. There is little doubt that if it ever gets into the hearing stage in the House Armed Services Committee, H. R. 1168 will become law in time for actual implementation during the forthcoming fall and winter school terms.

The next few weeks are critical. If it continues to lie buried in the heavy committee agenda, the legislation will die, and with it all hope of desperately needed indoctrination flight training courses and other benefits which alone will strengthen and save ROTC college programs.

Every possible source of power must be used to force H. R. 1168 into hearings as first priority legislation. In so doing we'll be driving another nail into Joe Stalin's coffin. Meantime, the Congress is fiddling around while Rome burns.

THE AGRICULTURAL RESEARCH PLANE

THE original group of industry and government leaders responsible for the development of a pure agricultural airplane constructed at Texas A. & M. College under CAA contract will convene sometime during the annual Flying Farmers Convention at Fort Worth, August 25-29. The future of this vitally important development probably will be determined at that time.

The original policy group can literally make or break the project. It is clear that the Civil Aeronautics Administration can not go it alone, although recent developments seem to infer that there is some confusion on that point. Last month the airplane was flown to Washington and demonstrated to a large and impressive number of people including industry, government and the press. Phase One—the actual building of a flying model of the first experimental design—is a success. It was carefully and diplomatically handled and guided through to successful completion because Fourth Region CAA officials who knew what they were doing steered the project. The minute the airplane got into Washington, news stories appeared quoting production costs and making other alarming statements which are irrelevant and impractical at this stage of the development.

At its best, and this is one of the ideal cases, government sponsorship of civil aircraft design of any nature is a touchy, supersensitive subject. Industry co-operation on the agricultural airplane, reluctant at first, turned out to be the most important factor in launching the project and industry contribution in equipment and engineering gave material impetus to the actual construction. But this kind of far-sighted and intelligent cooperation can be destroyed and made to boomerang if people who aren't too well acquainted with the project and its ultimate purposes are permitted to muddy the water with half-baked statements and impossible promises of what can and what can not be done with the design.

There is much work yet to be done. Only Phase One is completed. Many other phases of the program have to be planned and implemented. The Department of Agriculture has yet to fulfill its promises to participate fully in the program, especially in providing funds for application equipment and experimentation and later for actual working aircraft which will probably stem from the present interesting prototype.

The Civil Aeronautics Administration, especially Fourth Region person-

(Continued on page 31)

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the superior strength of steel
increased resistance to abrasion
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provision for progressive growth in aircraft weight

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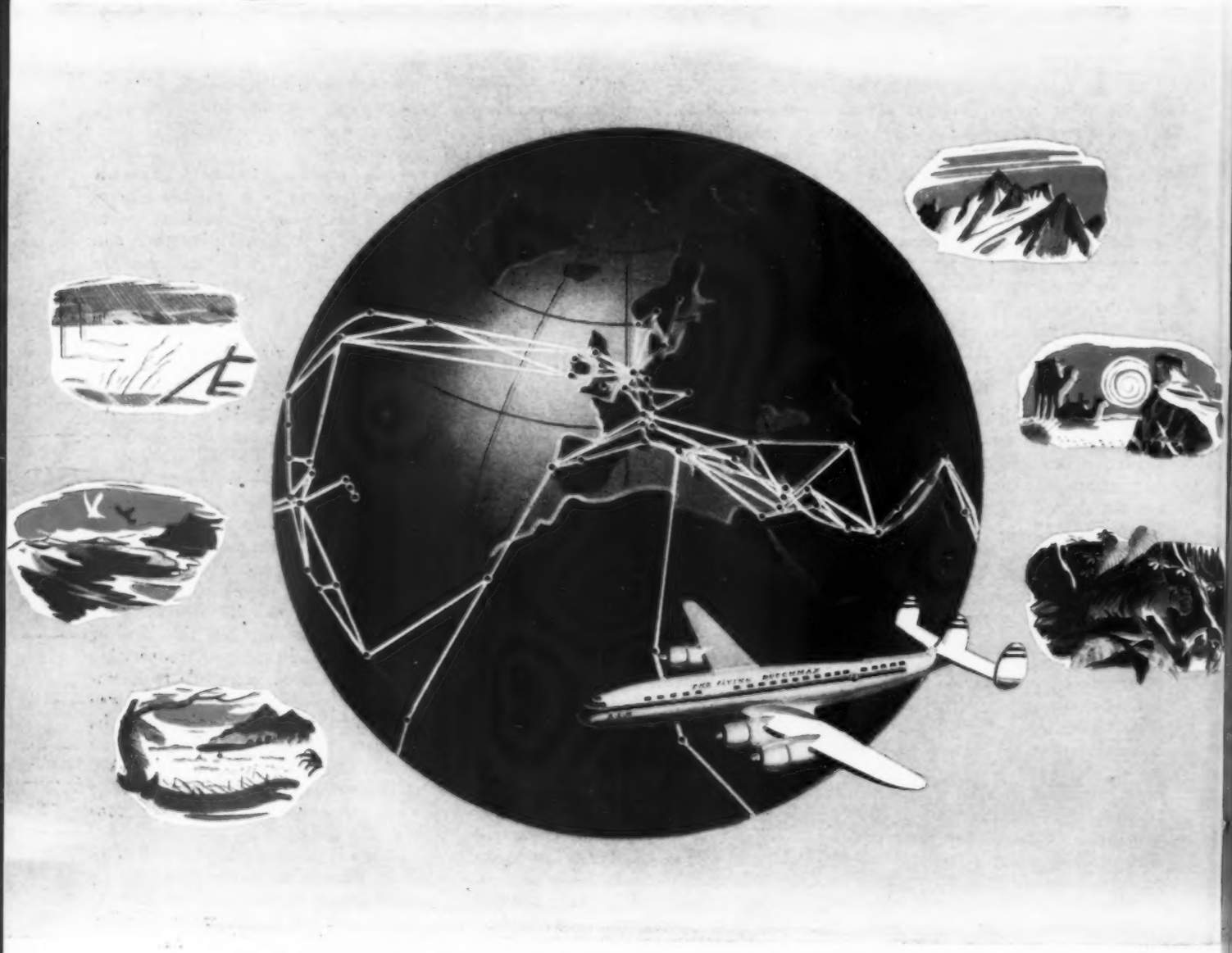

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SPOTLIGHT IN KOREA

CARGO PLANE GUIDES AIR DROP IN STORM

AN AIR BASE IN JAPAN, Jan. 11—Flying Boxcars dropped critically needed supplies to infantrymen in Korea last night during a snow storm so dense one of the big planes had to circle the area for four hours to guide the others to the right place.

The pilot who flew his loaded C-119 from this air base, said he arrived at the designated spot after fighting a heavy snow storm for two hours and dropped his cargo.

With darkness closing in the pilot realized other transports would have a hard time finding the area.

He climbed to 4,000 feet, leveled off and circled. His co-pilot contacted other C-119s en route to the drop zone. As each plane of the 314th Combat Cargo Wing reached the area, the hovering plane flashed on its landing lights. The other planes then swooped down and dropped their cargoes.

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T-35 Buckaroo MILITARY TRAINER

As rugged and ready as the colorful Texas cowpokes whose name it bears, the TEMCO BUCKAROO — now in limited service with the U.S.A.F. — is an advanced design, all-purpose military trainer specifically engineered to meet the requirements both operationally and costwise of modern present day air forces.

Another outstanding example of TEMCO versatility, the BUCKAROO is an all metal two-place tandem, low wing monoplane powered by a 165 HP Franklin Engine, unexcelled both for primary and basic training.

Throughout the design and development of the BUCKAROO, TEMCO engineers have concentrated not only on providing an airplane that will best meet military training requirements, but on providing one that will meet these requirements at the lowest possible cost both from the standpoint of original price and that of maintenance and upkeep. In the finished product, TEMCO is convinced that it has an airplane that will not only train military pilots better, but train them at less cost than any other trainer presently available.

Designed for first flight as well as progressive military training, the BUCKAROO's range, instrumentation and design make it a truly all-purpose military trainer.

Rugged overturn structure of the BUCKAROO is an integral part of the forward canopy frame, providing full visibility from both cockpits in addition to full protection for both pilots.

TEMCO TEXAS ENGINEERING AND MANUFACTURING CO., Inc. DALLAS, TEXAS

Texas Engineering and Manufacturing Co., Inc.

DALLAS, TEXAS

Nose hangar and workshop at front-line strip was constructed of salvage from crates. Plane shown is L-5, now replaced by

A familiar view at liaison strips near the front. Strips are usually in river bottom areas which offer level terrain but are either extremely muddy or extremely dusty.

Three stars on this L-19 mark it as a staff plane used by the commanding general of the 10th Army Corps in Korea. Pilots shown also fly Navion L-17's and Bell helicopters. Note metal landing mat.

Cessnas in Combat

HEADLINES may rightfully shout the glories of U. S. fighting planes in Korea. But up front where the ground fighting rages, it is the unarmed little lightplane which walks off with the personal plaudits of the GI. True it is that jet assaults and bomber missions sledge-hammer concentrations of numerically superior Communist ground forces. But in the eyes of the rifle-toting GI, the local picture is far more personal, and stand-

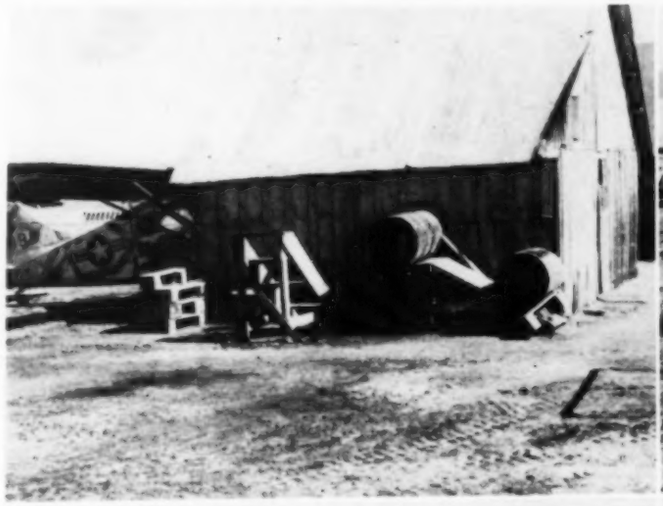
Assembled after arrival in crates, Cessnas below are at Japan air base awaiting ferry flight to Korea. USAF assembles them for Army.

No. 404 was used for a tour of the front in Korea soon after first quantity of Army Cessnas to enter combat had begun operations. L-19's are all-metal.

At one air strip near the front, these anti-aircraft gunners were photographed. These pictures were made during early Spring on a tour of the front.

Army aviators (formerly called liaison pilots) are not without airplane art. This vertical fin on a Cessna has one of the more acceptable portraits used.

Nose hangar and workshop at front-line strip was constructed of salvage from crates. Plane shown is L-5, now replaced by newer, more powerful Cessnas.



A familiar view at liaison strips near the front. Strips are usually in river bottom areas which offer level terrain but are either extremely muddy or extremely dusty.

Tragedy is represented by this Korean boy and his pet, both orphaned but "adopted" by a liaison outfit. Note Army division patch on vertical fin of L-19.

Here's L. A. Vanderlip (right) at one of the liaison bases near the front. Officer on his left is in Ordnance, which provides aircraft maintenance.

ing out in sharp focus in that picture is the so-called putt-putt airplane. It's always close by. It takes off, flies and lands right in the midst of the GI's personal war with the enemy.

These observations have been made by L. A. Vanderlip, who has just returned from Korea. As a civilian field service representative for Cessna Aircraft Company, which is producing the L-19 liaison airplane for the Army Ground Forces, he toured the front in a lightplane as part of his duties with air service units concerned chiefly with aircraft maintenance. From what he has seen, the lightplane has come through with impressive success both in the air and in ground servicing. It has done this under most severe conditions and in operations greatly accelerated because of mounting pressure from air-minded ground generals for all the light aviation the Army can get its hands on in Korea.

In Korea the lightplane has become a rugged, dependable, simplified vehicle which truly "belongs," right up at the front where all military equipment undergoes the ultimate service test in actual combat.

Nothing new, the military use of lightplanes originated a decade ago before Pearl Harbor. Ground forces on maneuvers had the versatility of two-place civilian planes demonstrated to them in Louisiana. During World War II they were used in many combat areas. But in Korea their use has been greatly enlarged. Indeed, it is a fact that one of the major basic lessons learned by U. S. forces in Korea had to do with the tremendous advantages offered by liaison aviation including, for the first time in any combat area, small helicopters. Rotary-wing aircraft are used almost solely for air evacuation of troops at the front while lightplanes, which are far more simple in their mechanical servicing requirements, are utilized for practically all of the ground forces' air liaison work.

(Continued on page 31)

Cessna L-19

An all-metal, high-wing, 2-pl. liaison type monoplane, used for frontline reconnaissance and air observation missions to assist the ground-gaining arms in combat operations and for the training of pilots. Powered by a Continental Model O-470-11, 6-cylinder, horizontally-opposed, air-cooled engine and mounting a fixed-pitch all-metal McCauley propeller.

Take-Off Power Rating (2,600 rpm.), hp.	**213**
Normal Power Rating (2,300 rpm.), hp.	**190**
Empty Weight, lbs.	**1,495**
Mil. Gross Weight, lbs.	**2,400**
Fuel Capacity, gals.	**40**
Take-Off Distance, Hard Runway, ft.	**390**
Take-Off Distance, Turf-Sod, ft.	**414**
Rate of Climb, fpm.	**1,020**
Landing Distance, ft.	**320**
Stall Speed, power off, full flaps, mph.	**49**
Observation Speed, power on, mph.	**43**
Cruising Speed (29 per cent of rated power), mph.	**98**
Service Ceiling, ft.	**23,100**

Note: All performance is at 2,400-lb. gross weight, sea level, zero wind unless otherwise stated.

Twin-Bonanza Up

Take-off shows Twin-Bonanza 12 ft. in the air less than 700 ft. from start, despite 97-degree air temperature at Shreveport. It carried six persons. Model 50's door (left) is exactly like Bonanza's. Factory Pilot Jelly Filer is folding right front seat forward.

—(FLIGHT MAGAZINE Photos.)

Distributor Currey Sanders at Shreveport is shown below at right with Bob Prince, one of his pilots, admiring new Twin-Bonanza as it arrived for demonstration. Demonstrator is visiting 36 Beech territories on 4-month junket.

By TOM ASHLEY

BEECHCRAFT distributors, who did the unprecedented by selling 140 new Twin-Bonanzas at $44,950 each before any buyer had a look at the Model 50, are now getting around to demonstrating the airplane. And the customers, who put up $5,000 cash deposit each on orders a year or more in advance of delivery, are finding the newest Beechcraft to be everything the sales talk pictured it to be. It all adds up to a fabulous chapter of commercial aviation history in the making.

Actual production has a long way to go before any Twin-Bonanzas start rolling from the factory in 1952. But the first so-called "hand-made" demonstrator was recently completed and immediately rushed into a demonstration tour of the country. First demonstrations were in the Southwest, and we went along on some of the junket to see the preview as the customers saw it.

"We thought," explained Chief Factory Test Pilot Vern Carstens, "that the people who put up their orders and the distributors who did the selling ought to have a look at the airplane. So we're hopping everybody. This demonstrator is getting the works like no other demonstrator ever got."

What he meant by "the works" is that there are 36 Beechcraft territories where the airplane will be taken to hop people. Each territory gets up to 3 days with the airplane. This adds up to about four months of barnstorming. During the first ten days, the airplane visited five distributors, these being Norman Blake in Oklahoma City, Alamo Aviation in San Antonio, J. D. Reed in Houston, Currey Sanders in Shreveport and J. R. Gray in Dallas. In five days of flying, It was hopped 147 times on demonstration flights, carrying 576 passengers. Since the average hop is about 20 minutes, this was 40-odd hrs. of flying

been developed. When the crew does

This makes everybody more comfort-

propeller revolves a slow 2,000 rpm.

Up and Around

crammed into ten days—more than the average private airplane is flown in a month. Averaging right at 15 hops per day is a lot of work as well as a lot of flying, and Vern figures that about 25 per cent of all the flying was at maximum power. Single-engine performance was demonstrated on each hop, and propeller was feathered (left prop one week, right prop the next, and so on) about 15 times per day. Landing gear was operated twice on each hop, to average about 30 full cycles per day.

It was plain that the airplane, officially numbered "H-2," being hand-made and the second Twin-Bonanza to be built, was being subjected to a heavy-duty service test while hopping people. When we left it at the end of its first ten days, the only maintenance required had been repair of a mounting bracket for an electric feathering motor. There had been no hitch in any shape or form. For the second airplane in a completely new design this was really something, for the Twin-Bonanza has plenty of accessories and gadgets.

At each stop, the factory crew and demonstrator are at the disposal of the distributor to get in as many demonstration hops as possible. In advance, buyers and prospects are contacted and appointments are scheduled for flights. When Vern and the airplane hit town, everybody's ready and waiting.

As can be imagined, they have to line up. By the time the crew gets out to the airport from the hotel, some ten or fifteen prospects are gathered about the Beech—in the cabin, on the wing, under the wing, opening and closing cowls, studying the tricycle gear and especially the beef in the nose strut, and otherwise going over all visible details. It has been years since Beech brought out so much "newness" in Twins and the customers can see right off that a lot of new things have

Feathering propellers make possible the Twin-Bonanza's exceptional single-engine performance. We got the above picture when Beech Chief Test Pilot Vern Carstens buzzed the runway for us indicating 185 mph. Photo at right shows feathered prop from cabin.

(FLIGHT MAGAZINE Photos; bottom by Tom W. Collins.)

Twin-Bonanza offers extraordinary visibility on approach, even in flare-out. Large picture below shows forward panorama just off airport with 30-degree flaps and steep approach at 120 mph., with smaller photo at right showing nose lifted while crossing the fence at 85 mph.

been developed. When the crew does arrive, everybody agrees this Model 50 is quite a package of progress. The big question is, "What'll it do in the air?"

Loading for the first hop more or less takes care of itself. The distributor had dropped everything the day before to perfect his loading schedules. But, sure enough, somebody fails to show and somebody else who isn't expected does show. So five people and the factory pilot go ahead and climb in while the fouled-up load sheet is studied with head-scratching. Three of them slide into the rear seat and three are fitted in up front, counting the pilot.

"That's the blower," says Vern as he flips a switch. Before anybody can ask, "What blower?" ventilation air is sucked in from the nose and floods the cabin through convenient outlets. This makes everybody more comfortable, especially Model D18 Twin Beech pilots and others so unaccustomed to cooling air on the ground. It is nice and everybody appreciates it.

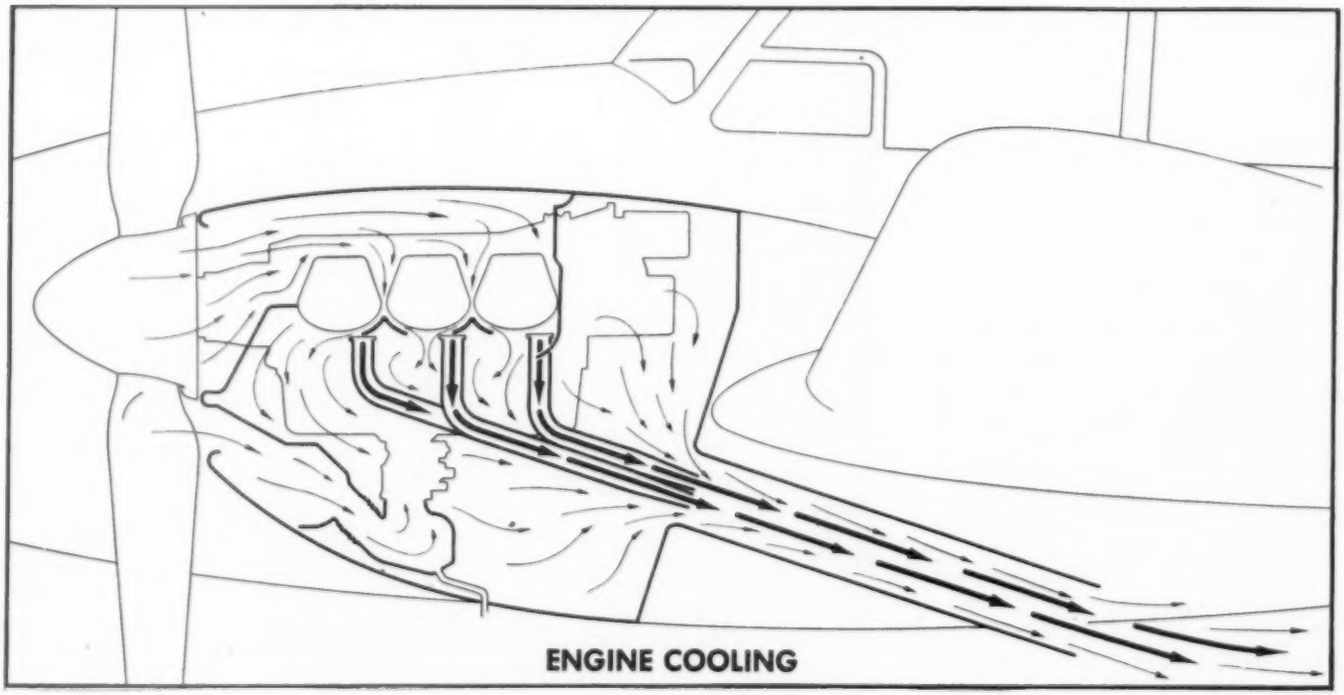
Then, after closing the door, the pilot starts the Lycomings and promptly demonstrates some smooth, yet highly maneuverable taxiing. It isn't far to the take-off runway (Vern plans it that way to get in more hops with less taxiing), and the customers stare a little at the tachometers as the high rpm.'s are developed. Somebody comments they thought they were looking at manifold pressure. At 3,400 rpm., the Lycomings develop 260 hp. for take-off. Normal rated 240 hp. is developed at 3,000 rpm. Cruising rpm. is "down" around 2,600 rpm. to 2,750 rpm. These are geared engines and at 3,000 rpm. on the crankshaft, the propeller revolves a slow 2,000 rpm.

For take-off, Vern revs the Lycomings to maximum rated power, releases the brakes and, with 10 degrees of flaps, is off the ground within less than 700 ft. at about 65 mph. During the Shreveport demonstration rides for customers of Currey Sanders, Beech distributor for the Ark-La-Tex trade area, outside air temperature was 97 degrees but 700-ft. take-offs were still negotiated with technique.

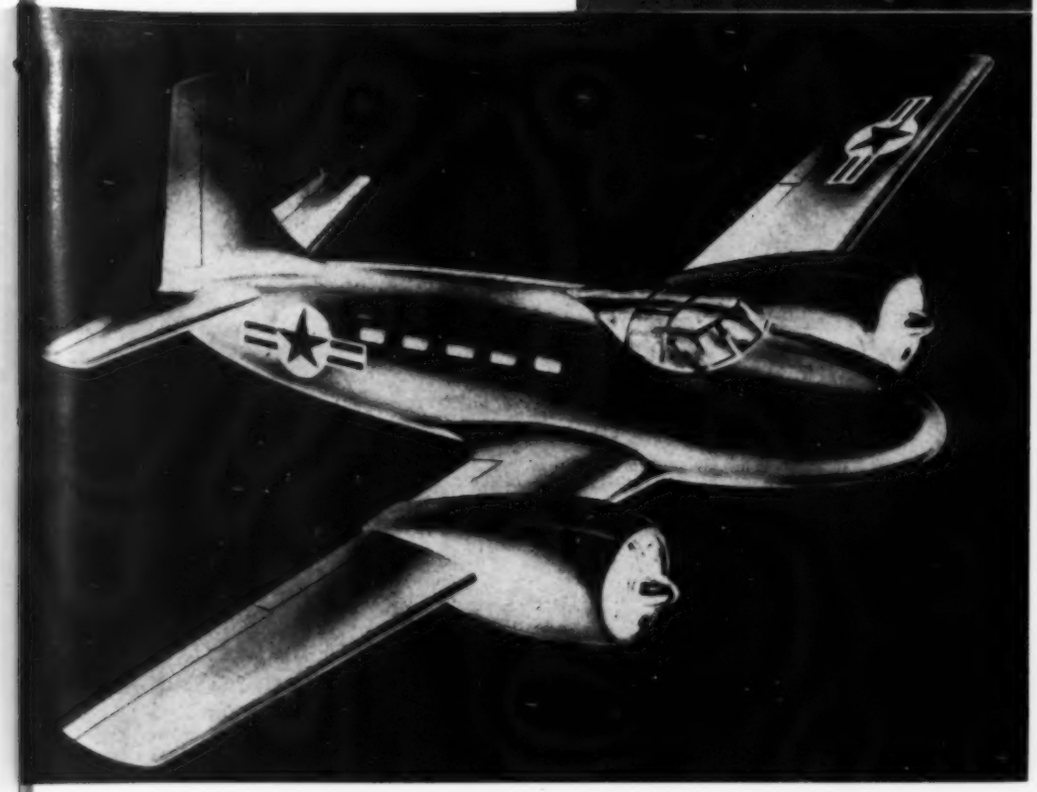
Minimum single-engine safety speed for the Twin-Bonanza is 89 mph., after which the landing gear is raised before climbing out at reduced power. The airplane has a rate-of-climb of better than 1,450 feet per minute at gross weight, sea level and in standard air. Best rate of climb is 110 mph. at sea level, decreasing to 95 mph. at

(Continued on page 27)

Nacelles and propellers are among the Twin-Bonanza's most interesting features. Diagram below sketches flow of cooling air from top of engine down through baffles which direct it rearward at slight downward angle into Beech augmentor tubes. Exhaust is directed into tubes also. This gives pumping action as power is applied, pulling more cooling air as well as making possible some exhaust thrust. No cowl flaps are needed. Engines are 6-cylinder Lycomings which develop 260 hp. for take-off. Propeller is quick-feathering Beech development having plastic-material blades and squared tips. Engine mount is of sheet metal. Note accessibility.



ENGINE COOLING



Beechcraft T-36 trainer to be produced for USAF grosses about 25,000 lbs. but is powered with 2,300-hp. Pratt & Whitney R-2800-CB-15 engines. This ratio of power to weight gives it an unprecedented rate of climb of over 3,000 feet per minute. It will cruise at 300 mph. as a trainer.

300-MPH BEECH TRAINER

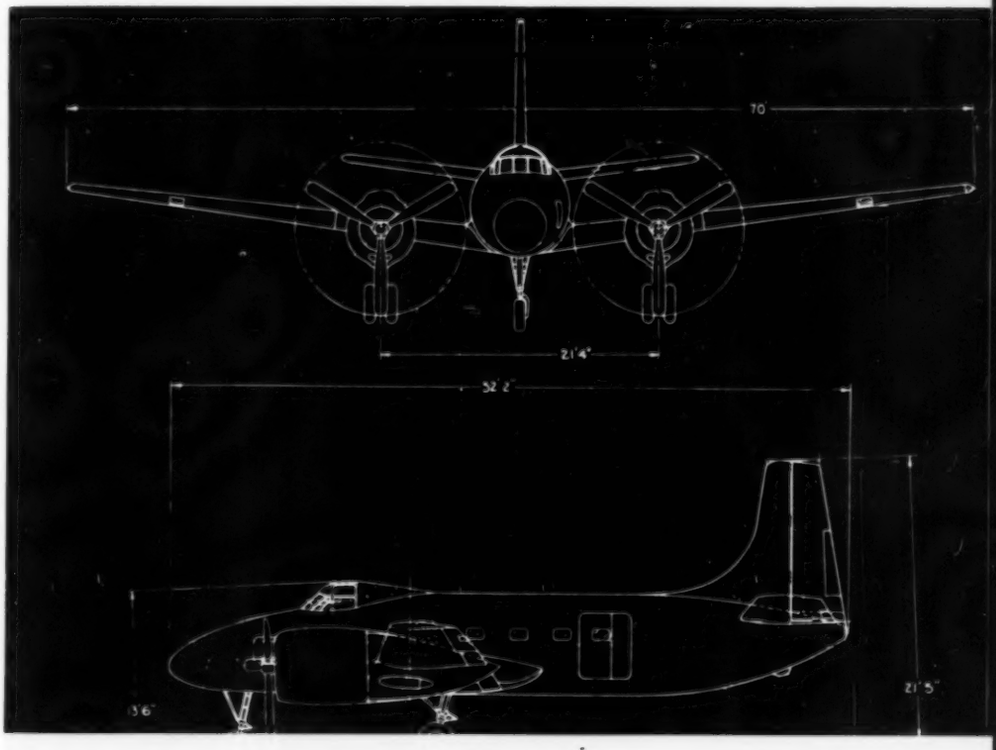
A POWERFUL twin-engine trainer, designated T-36, to be produced for the U. S. Air Force by Beech Aircraft Corporation at Wichita, Kansas, offers interesting transport as well as training possibilities. It is much smaller than the widely-used Convair-Liner 240 and its military trainer version, but has the same 2,300-hp. power plants. As a result, it offers very high performance.

For example, the T-36 has a sea-level rate of climb of better than 3,000 feet per minute. This puts it at 10,000 ft. in less than 4 mins., and it can climb to 20,000 ft. in less than 8 mins. Cabin pressurization is planned, as well as thermal anti-icing.

It will be the fastest multi-engine Beechcraft yet produced, having a normal cruising speed close to 300 mph. Using only 40 per cent of power, range will be about 1,000 miles.

Empty weight for the trainer is 18,230 lbs., gross weight 25,000 lbs., useful load 6,770 lbs. As a transport, a gross weight of 27,500 lbs. is indicated, making possible a 9,270-lb. useful load. Take-off run to clear a 50-ft. obstacle is about 2,000 ft. for the trainer version, with a landing distance of 2,300 ft. over a 50-ft. obstacle. Power-off stall speed with flaps and gear extended is about 97 mph. Service ceiling is above 30,000 ft., and single-engine ceiling is about 19,000 ft.

The design is said to be adaptable to turbo-prop engines and provisions for external fuel tanks have been considered. ★ ★ ★



Dimensions of T-36 show it to be much smaller than Convair-Liner 240 which it resembles. Cabin will accommodate 12 students; large cockpit has facilities for crew of four (three students, one instructor).

including skiing behind Roy Brown-

supervisor of the State Improvement

Schanz, a genial native of California,

Water skiing behind a seaplane furnished something different for Florida air tourists last month when they visited Roy Browning's Air Park at Keystone Heights. —(Forida State News Bureau Photo.)

Florida Flying

Two large air tours sponsored by pilots promote flying fellowship activities

By MONTE BRONSON

IT was a hot, murky day in September, 1937. The tail end of summer had settled over South Florida and there wasn't much going on around the hangars at Sunny South Airport in Miami, except an occasional blast from a small ship being checked for mag trouble on the flight line. The hurricane season was officially on, and that's perhaps why some of the boys dropped around that afternoon.

They ambled in by two's and three's to check on the latest weather and talk over the last big blow. Thirteen men—six of whom are now well known skippers with commercial airlines, and seven others who were interested in flying—made up the group. They sat around in the hangar office keeping a close eye on the plotting lines on a weather chart which showed a storm inching its way along in the Caribbean, not more than a couple hundred miles from the Florida mainland.

Although no one remembers a roll call being taken, L. A. (Rusty) Heard, now a skipper for Eastern Air Lines, relates that it was decided between weather reports they would band together to form a pilots' association. The purpose: To promote private flying and fellowship among those interested in aviation.

Present were John Trevor, Charles Darnes, Roland Weare, Walt Shelton, Don McRae, and Rusty Heard, now all captains in commercial service; and W. A. Earle Albury, Carl Holder, Don Woodward, J. B. Holloway, Frank Skillen, Verne Wunnenberg, and Karl Voelter, Miami businessmen pilots. From this nucleus of the "lucky thirteen" came the Miami Air Pilots Association, which was organized September 9, 1937. The organization grew and waxed fat until the advent of World War, at which time it was disbanded.

The interest in an association had spread wide enough throughout the state, and even into neighboring and nearby states, that in 1945 the group was reorganized as the Florida Air Pilots Association. There are now more than 600 members registered on the rolls and at least 250 of these are active in Florida flying. The group, which is considered one of the most outstanding private flying organizations in the country, now sponsors at least two large air tours each year.

Recently, a number of FAPA members participated in the first Jacksonville-to-Mexico City air tour, sponsored by the Jacksonville Aero Club. Last month's annual state air tour, sponsored by the FAPA, was typical of Florida "air get-togethers." Starting from Ft. Myers, the historic winter home of Thomas Edison on the lower Gulf coast, the group hopped to St. Petersburg, Keystone Heights, Daytona Beach, Kissimmee and ended up in Stuart, on the lower east coast, a week later.

There were 38 planes of 17 different types, ranging in cost from $2,000 to $79,000, at the height of the tour in Kissimmee, and members and guests ranged from 40 to 80 persons at different points. On-the-ground social activities ranged from simple to elegant. Ft. Myers offered dinner dancing. Swank atmosphere complete with swimming pool was the order of the day at St. Petersburg's ritzy Bahama Shores Hotel. Keystone Heights went all out for the visitors' pleasure with a large turkey banquet, followed the next day with a display of water sports

including skiing behind Roy Browning's seaplane. Florida's best orange juice, served by a bevy of prize-winning bathing beauties, was the welcoming surprise upon landing at Jule Gresham's efficiently operated Daytona Beach Municipal Airport, and the highlight of action-packed entertainment came when a stop was made at Kissimmee. The tour reached this Central Florida cow town on July 3, day of the nationally famous Silver Spurs Rodeo.

Civic and city dignitaries greeted the planes at the airport—but not in the usual fashion. They were "flying" another well known and dependable form of transportation—horses. On the menu at this Western town tucked away in the Florida winterland was colorful rodeo parade, tour of a nearby ranch and a real "howdy, pardner" barbecue.

Kissimmee has long been famous in aviation circles because of the unusual intentional or unintentional foresight on the part of two of its citizens nearly a half century ago.

In 1908, about the time the Wright brothers were beginning to make headlines, the then mayor of Kissimmee, Major Tim Murphy, and P. A. Vans Agnew, the city attorney, in fun (we think) drafted a city ordinance regulating and controlling the movement and handling of aircraft in the city.

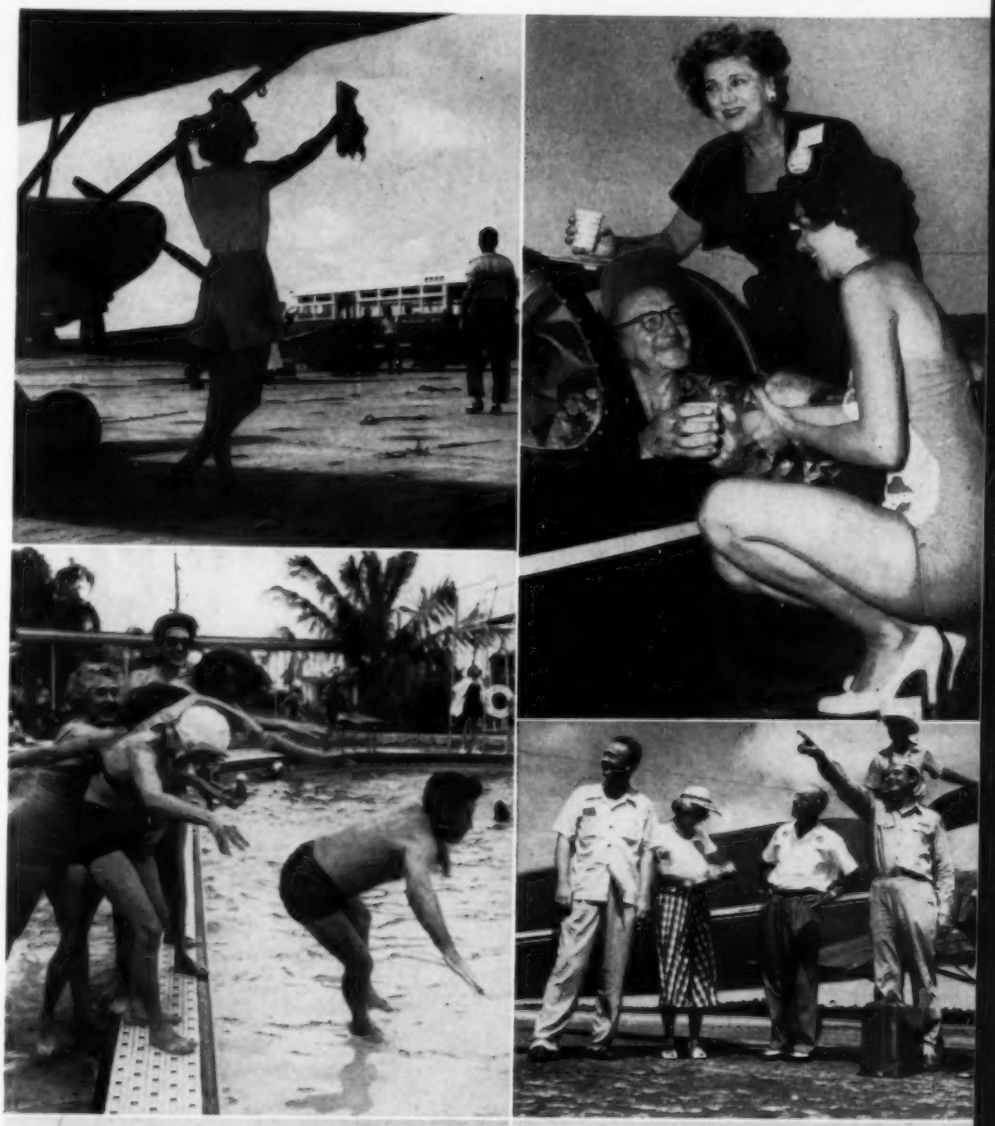
The airplane was much of a joke at the time and it is said that the ordinance was intended as nothing more than a jest. However, as events have proved during the past 43 years, the ideas put into the draft ring with the quality of some of the amazing and somewhat accurate prognostications of Nostradamus.

The Florida Air Pilots Association is now headed by Jess Bristow, who is serving his second term as president. Bristow, a nationally-known air show producer and aerobatic pilot, headed up the FAPA's Miami air show early this year. The show, which for the first time had been sponsored by the association, was heralded as a great success, both from the standpoints of finance and showmanship.

Hub Davis, immediate past president, is another of the "spark plugs" in the organization as is Harry Collins, present chairman of the activities committee. Waldron (Wally) Schanz, supervisor of the State Improvement Commission's Aviation Division, works with the organization from the state level. He has done much to stimulate interest in Florida flying and safety measures and is well regarded by his associates in FAPA.

Schanz, a genial native of California, states that he reversed Horace Greeley's advice and came eastward to make his living. He has been flying in Florida since 1928 and has been in his present position as aviation supervisor since February, 1949. ★ ★ ★

A bus met air tourists arriving at Daytona Beach. But not before Air Tour Director Harry Collins was refreshed with a tall orange juice served from the wing of his Ercoupe by pretty La Quinta Renfroe. With them is Blanche Noyes, head of CAA's air marking division. Swimming pool fun shows some of the gals dunking Wally Schanz, state aviation director, at swank Bahama Shores Hotel in St. Petersburg.
—(Florida State News Bureau Photos.)



Bellanca scene at center right shows air tourists at Ft. Myers watching other planes arriving. There were more pretty girls in bathing suits to serve orange juice when a Twin Beech arrived (lower left). The Western display represents Kissimmee, which gave the air tour a rodeo parade, ranch tour and barbecue.
—(Florida State News Bureau Photos.)

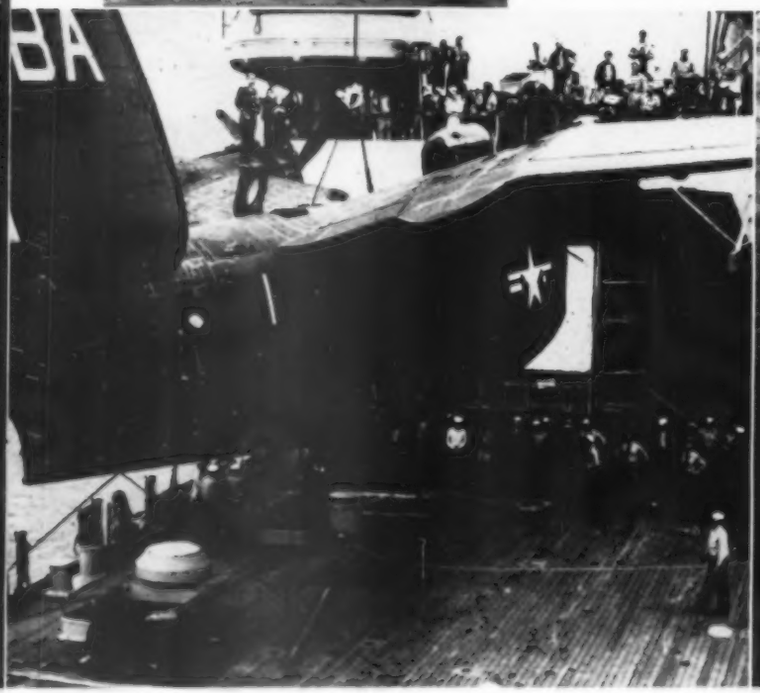
Seaplane tenders play a major role in the Navy's anti-submarine warfare and other missions of its flying boats. Martin PBM Mariners operating off Korea, China and Japan are shown in these views. At lower left, seamen position a tow buoy used by USS Gardiner's Bay for refueling planes. Close-up of refueling is shown above left, as seen from USS Timbalier. Martin Mariner at right above is being hoisted aboard USS Curtiss off Japan.

—(U. S. Navy Photos from Naval Aviation News.)

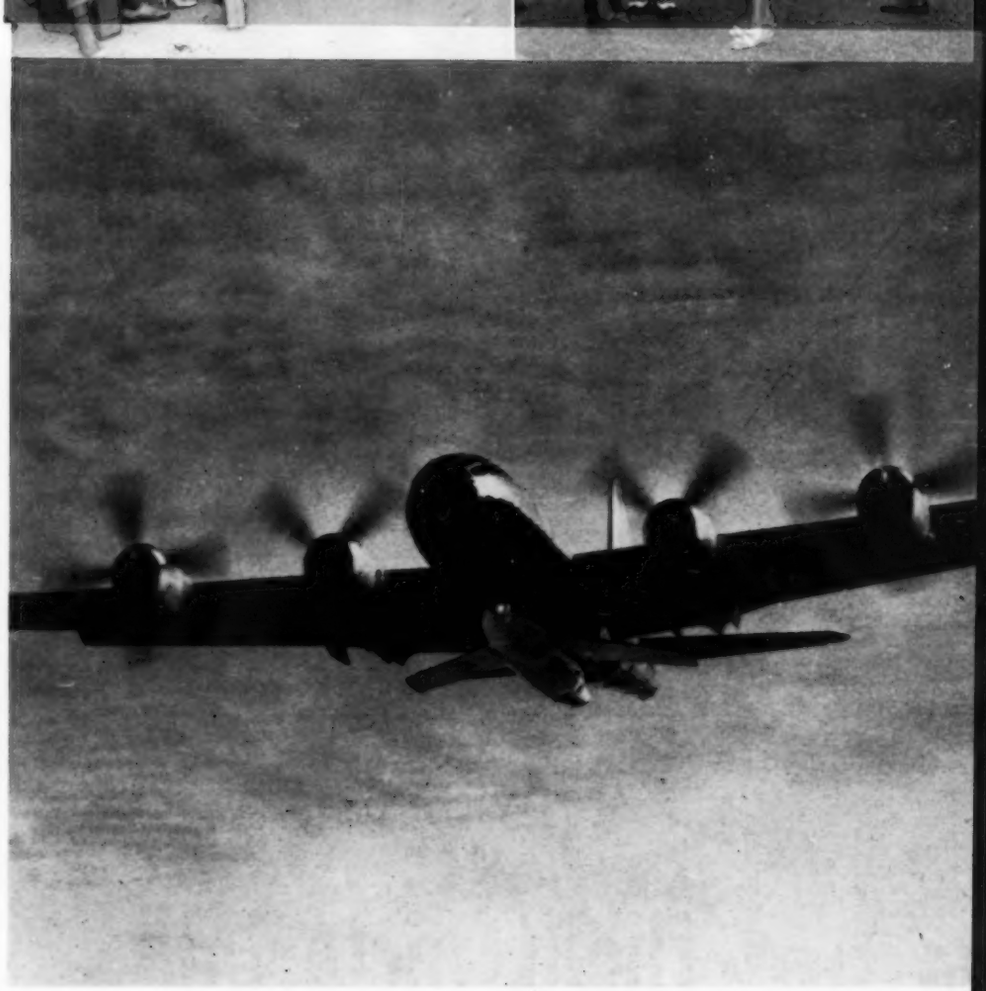
flight pictorial

Small size of seaplane tender's deck is shown in the photos below. Lifted from water, big flying boats are positioned carefully (lower left) for accessibility during maintenance. Crowded deck scene below shows PBM-5's lashed down on the seaplane deck of the USS Currituck while en route to the South Pole with Task Group 68.2. Martin Mariners will soon be replaced in the Navy by the new Martin P5M-1 Marlins.

—(U. S. Navy Photos from Naval Aviation News.)



flight pictorial



HOW FAST AND HOW HIGH—that was the question on July 3 when the Navy said its sonic research craft, the rocket-powered Douglas D-558-2, had attained the highest speed and altitude ever recorded by a piloted plane. No figures were given. But the straight-wing Bell X-1 had already attained about 1,000 mph. at 50,000-60,000 ft. To beat the Bell, the swept-wing, cleaner Douglas had probably reached 1,200 mph. at 60,000-65,000 ft., as follows: (1) Launched with 2 or 3 tons of fuel at 35,000 ft., from a B-29, Douglas Test Pilot Bill Bridgeman, 34, took about 6 seconds to light all four rocket tubes; (2) already in a climb by that time, he was now burning a ton of fuel per minute; (3) he timed his climb to level off with about 20 to 30 secs. of fuel for maximum power; (4) his tubes cold again without power, he glided downward and back to base for 13 mins. before landing at 190 mph. on the 7-mi. runway at Edwards Air Force Base, Muroc, Calif., having covered, in his glide, about 10 miles of distance for every mile of altitude lost.

—(Douglas Photos.)

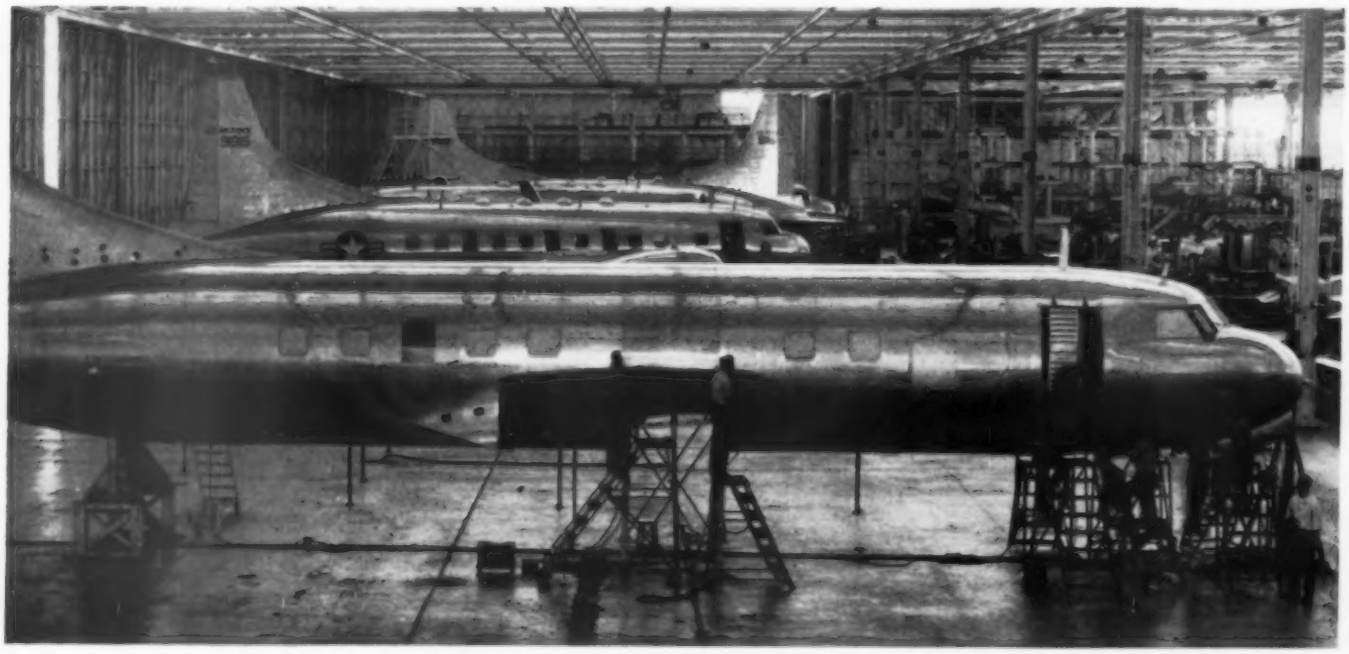
PHOTOS SHOW DOUGLAS SKYROCKET CARRIED ALOFT AND LAUNCHED FROM B-29. PILOT LIGHTS ROCKETS AFTER DROP.

NO REST FOR THE WORKHORSE was possible when the Chase Aircraft Company's C-122 assault transport completed 276 hrs. of flight during a 3-week accelerated service test. Air Force pilots of the 16th Troop Carrier Wing did the flying despite adverse weather, at Stewart AFB, Smyrna, Tenn. Test included over 100 hrs. on night instrument flights.
—(Chase Aircraft Photo.)

flight pictorial

WHATTSA MILLION MILES? A total of 13.8 million miles, or the equivalent of 552 trips around the world, is the combined record of these four Pan American Airways captains. All are based in Miami, fly Latin America, are over 50. With seniority rank numbered, left to right are Roy Keeler 3, John Rogerson 4, Basil Rowe 1 and Robert Fatt, Jr., 2.
—(Pan American Airways Photo.)

THE BIG STRETCH IN FUSELAGES is represented by the Convair-Liner 340 prototype shown here during assembly in San Diego. It is 79 ft. 2 ins. long, or nearly 5 ft. longer than the Convair 240, trainer versions of which are in the background. Model 340 will carry 44 passengers and the first of about 100 now on order will be delivered next Spring. Entry stair is shown on right but will be relocated on left.
—(Convair Photo.)



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The USAF T-29, the navigational trainer version of the world-famed Convair-Liner, is rolling off the production line in steadily increasing numbers.

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HOUSTON, TEXAS

TWIN-BONANZA

(Continued from page 18)

12,000 ft. Best angle of climb is at 78 mph. Cruising climb is at 500 feet per minute, using 80 per cent of power at an indicated speed of about 150 mph.

In the demonstration, the customers are shown the Twin-Bonanza's stall with cruising power. With the nose way up, good stability is demonstrated during the buffeting. With gear and flap up, power-on indicated stalling speed at 5,500-lb. gross weight is 69 mph. With gear and flap down, it is 54 mph. Power off indicated stalling speed is 75 mph. with gear and flap up and 64 mph. with gear and flap down.

In the demonstration stall with power off, the gear is lowered and the nose pushed over as a very steep glide is entered to show the airplane's slow acceleration in that condition. It appears to be descending at about 1,500 ft. per min. at only 145 mph. indicated air speed and takes quite a while to build up speed.

With gear up again, the demonstrator is cruised at 2,600 rpm. and 23 inches of manifold pressure (about 60 per cent of power) to indicate 162 mph. at 2,000 ft. For cross-country travel, the Twin-Bonanza cruises at 190 mph. true air speed at 10,000 ft., using 65 per cent of rated power at a fuel consumption slightly less than 26 gals. per hr. Fuel capacity of 134 gals. is provided in four wing tanks. On the demonstration junket, we learned provisions will be made for two small auxiliary tanks, one in each inboard wing section, and that these two auxiliaries will offer 36 gals. of additional fuel. Thus the Twin-Bonanza will be able to carry 170 gals. of fuel.

Still cruising at 2,000 ft., and indicating 162 mph., the demonstration pilot feathers an engine, starts a climb, adds a little power, trims the rudder about 17 degrees and the air speed settles to about 100 mph. indicated at a 200-fpm. rate of climb or so. The pilot then banks the airplane 25 or 30 degrees in both directions, both into and away from the feathered engine. This brings comment of praise from the customers, for they have never seen a Twin Beech perform this way on one engine with so much stability and maneuverability. Indeed, some Twin pilots at this point fully expect the airplane to roll, the "normal" thing to happen if handled abruptly as the Twin-Bonanza appears to be handled by the test pilot, *who shows everybody that he has had his feet flat on the floor all the while, using no rudder pedal.*

This single-engine business is where the Twin-Bonanza becomes most effective in its demonstration hop. The propeller is a Beech B200-116, and it feathers in only four seconds or less. Single-engine ceiling for the Twin-Bonanza with propeller feathered is said to be 7,500 ft. (50 fpm.). With one propeller windmilling, this single-engine ceiling is 5,100 ft. Sea level rate of climb with one engine feathered is 310 fpm., and with one propeller windmilling is 210 fpm.

We later flew with Vern from Shreveport to Dallas. At 7,500 ft. we ran a single-engine cruise check. Outside air temperature at that altitude was 60 degrees. With a power setting of 21 inches and 2,750 rpm. (65 per cent power) for the right engine and with the left engine feathered, the indicated air speed fell off to 120 mph., then slowly dropped off until we had the airplane stabilized to hold altitude and speed at 7,500 ft. In this condition, the single-engine indicated cruising speed was 104 mph., reached 10 to 15 mins. after feathering the left engine. We used 17 degrees of rudder trim.

In a demonstration staged so we could get a single-engine fly-by photograph from the ground, Vern feathered the right engine in his turn from

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8 ea.	H-5013-3	Tube Mounting	Douglas DC-3 Wright 1820
18 ea.	SK-1925-1	Insert	
36 ea.	SK.-1292-2	Sandwich	
8 ea.	J-1202-1	Tube Mounting	Douglas DC-3 Pratt & Whitney R1830
16 ea.	J-1789 (J-2035-1)	Insert	
32 ea.	SK-1292-1	Sandwich	
1 ea.	J-1278-1	Tube Mounting	Beechcraft D-18-S Wasp Jr.
2 ea.	J-1279-0	Sandwich	
2 ea.	J-2860-6		Super 260 Ryan Navion
2 ea.	J-2861-9		

Required Per Engine	Nomenclature & Number	
8 ea.	J-2245-1	Shock Mount—Beech Bonanza
4 ea.	J-2742-1	Ryan Navion 185
1 assy.	RL-15E	Cessna 195
1 assy.	RL-15F	Cessna 190
4 ea.	J-3608-1	Continental C-90 Engine
4 ea.	H-3006-1	Cessna 170
1 assy.	RL-15D-5	Lockheed Lodestar

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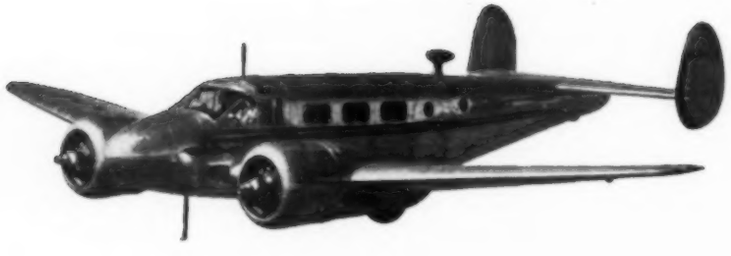

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General Mitchell Field
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Truax Field
Madison, Wisc.

Atlantic Aviation Service
New Castle County Airport
Wilmington, Delaware

Atlantic Aviation Corp.
Teterboro Airport
(25 minutes from Times Square)
Teterboro, New Jersey

Butler Co., Aviation Division
Municipal Airport
Chicago, Ill.

Currey Sanders Aircraft Co., Inc.
Downtown Municipal Airport
Shreveport, La.

Francis Aviation
Capitol City Airport
Lansing, Michigan

Gray Aircraft Svc. Co., Inc.
D. A. Cody, Service Mgr.
Love Field, Dallas, Texas

Harte Flying Service
Municipal Airport
Wichita, Kansas

Hunter Flying Service, Inc.
Hunter Field
Cedar Rapids, Iowa

Ohio Aviation Company
Dayton Municipal Airport
Vandalia, Ohio

J. D. Reed Co., Inc.
Municipal Airport
Houston, Texas

Roscoe Turner Aeronautical Corp.
Municipal Airport
Indianapolis, Ind.

Tradewind Airport Corp.
Tradewind Airport
Amarillo, Texas

Tulsair Distributors, Inc.
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base leg to final at about 1,500-ft.

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Jacobsen Manufacturing Company, pioneer builder of power mowers, is located at Racine, Wisconsin, far from its affiliates — Worthington Mower Company, Stroudsburg, Pennsylvania, and Johnston Lawn Mower Corporation, Ottumwa, Iowa. In *time*, however, all three concerns are close. Each has a Beechcraft Bonanza. This means that Mr. O. T. Jacobsen, President, and officials of the affiliated companies can meet at Racine, return home with no time lost. Sales trips have more "sales" and less "trip." These Bonanzas are in the air almost daily, helping "expedite" government defense work and civilian production alike.

Compare these great C35 Bonanza features

Economy: When cruising, you use only 65% of available engine power. This results in longer engine life, lower operating and maintenance costs. Cruising-speed fuel consumption 9½ gallons per hour—a remarkable engineering achievement.

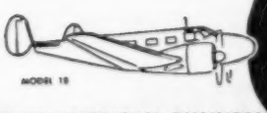
High performance: All-metal continuously variable pitch Beechcraft propeller has 85% efficiency — top range for its class. Take-off rating 205 h.p. at 2,600 rpm. Means even better short field performance, rate of climb of 1,100 fpm.

Unsurpassed safety: Now standard on C-35—Beechcraft Hi-Strength Safety Harness. New freedom of movement, unsurpassed protection. For added comfort, rear seat is two-position, with headrest. New fresh air intake increases ventilation.

For more news of this feature-packed business plane, contact your Beechcraft Distributor, or write Beech Aircraft Corporation, Wichita, Kansas, U.S.A.

BONANZA

Top speed, 190 mph
Cruising speed, 175 mph
Range, 775 miles
Fuel economy, 19.9 mpg



MODEL 18

Beechcraft

TWIN-BONANZA

BEECHCRAFTS ARE THE AIR FLEET OF AMERICAN BUSINESS

been sold, for delivery through 1952. Deposits are still being accepted, but

Airmen's Calendar

and all the agencies, companies and associations involved will go forward

base leg to final at about 1,500-ft. altitude and gathered speed in diving so that he was indicating 185 mph. when he passed the camera about 30 ft. off the runway.

In a demonstration landing, the pilot uses steep approaches to show the effectiveness of the Twin-Bonanza's 30-degree flap. Visibility is extraordinary in the approach and even in the flare-out. Demonstration landings are with a 120-mph. approach, slowing to about 85 over the fence with shortest possible roll (sometimes less than 300 ft.).

Back on the ramp, the customers file out down the wing, the two little retractable steps and to the nearest air-conditioned or shady spot. Those in a hurry have a last look as they walk around the airplane. But most customers stay on long enough to compare thoughts with others.

"Looks like it handles the way a little Bonanza does," is the usual comment. Then: "How about that single-engine control with ailerons? . . . It's got more climb than any airplane I've flown. . . . I like that ventilation. . . . That's a lot of fast transportation. . . . Much larger airplane than I expected. . . . Looks like a little A-26. . . . Not quite as soundproofed as a Bonanza. . . . Don't know about riding three people up front, maybe so. . . . Old folks might have a little trouble climbing in over the wing. They better put another handle-grip on the fuselage between the steps and the door. . . . We can go at night now. . . . Those engines sound pretty good. . . . How come they can't deliver mine before next year?" And so on.

People come away from demonstration hops confirming that the Twin-Bonanza is an eye-opener, a great airplane—everything the sales talk has said it is. Some of them would like to have more of a ride, especially to fly it themselves. But this, apparently, isn't possible if maximum coverage of prospects is to be had. Also, the airplane has a throw-over wheel and the only passenger who could fly it would be the man in the middle on the front seat. The others couldn't swap places with him in flight, since six persons, including pilot, are the regular load.

To those who have somehow expected the Twin-Bonanza to be a small version of the D18 Twin, there is the explanation that the Model 50 was never intended as such. Just the opposite is true—it is literally a scaled-up Bonanza, a private airplane for the owner who will fly himself or for the Bonanza owner who has a pilot but does not want a transport in the category of the big Twin.

The first 140 Twin-Bonanzas have

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For precision and dependability look to Kollsman

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been sold, for delivery through 1952. Deposits are still being accepted, but not at the $44,950 price the first 140 sold for. The price will be subject to future conditions.

Meanwhile, Beech at Wichita is finishing eight more hand-built Twin-Bonanzas while preparing production for the 140 airplanes on order. H-1 was the prototype, H-2 the demonstrator now on tour. H-3 will go to Lycoming, which purchased it. Clark Carr, whose Carco Air Service at Albuquerque, New Mexico, operates a fleet of Bonanzas flying passengers and mail for the Atomic Energy Commission in and out of the mountain strip at Los Alamos, has purchased H-4 and H-5. The Brazilian government will get H-6. Airplanes H-7, 8, 9 and 10 are earmarked for the U. S. Army Ground Forces. After these are delivered and are in service, production on customer orders will reach high gear, ten to twelve per month being delivered during 1952. ★ ★ ★

JUST AMONG OURSELVES

(Continued from page 9)

nel in charge of the work, and the Texas A. & M. staff headed by Fred Weick, are to be commended for their brilliant results, just as the industry has been for its generous and broad-minded participation. But the agricultural aircraft development program is still in swaddling clothes and needs considerable more nursing along before aviation, the nation's agricultural interests and those of the world will reap the many benefits that are sure to come.

Let's hope the original policy group and all the agencies, companies and associations involved will go forward with the same brilliant planning and programming that marked Phase One of the most promising experimental research aviation project ever undertaken for the betterment of mankind.

★ ★ ★

Airmen's Calendar

Aug. 11-19—Eighth Annual Michigan Aviation Week, sponsored by Aero Club of Michigan.

August 15-19—Fifth Annual All-Woman Transcontinental Air Race, Santa Ana, Calif., to Detroit, Mich., sanctioned by Ninety-Nines, Inc., Mardo Crane, Race Committee chairman.

Aug. 18-19 — National Air Races with Continental Trophy Race for Midgets plus Military Events, Detroit, Mich.

August 22-26 — International Convention, the Ninety-Nines, Mackinac Island, Michigan.

Aug. 24-26—Fifth Annual Convention of the Air Force Association, Ambassador Hotel, Los Angeles.

Aug. 25-29—National Flying Farmers' Convention, Ft. Worth, Texas.

Oct. 11-12 — 1951 Conference on Airport Management and Operations, University of Oklahoma, Norman, Oklahoma.

CESSNAS IN COMBAT

(Continued from page 15)

Liaison aviation is literally part and parcel of the ground forces, just as are trucks, jeeps, tanks and staff cars. Each Division has its own little unarmed air force of lightplanes, and some units within a Division have their particular airplane quota. On top of this, lightplanes are assigned to Corps staffs and to Corps units such as artillery outfits. Farther up the chain, the 8th Army in Korea has its air service organization under which Corps, Division and lesser liaison aviation operates.

In Korea, the jets, bombers and air transports operate over or near the front on missions which begin and end far back at relatively large and complex bases and even ships at sea. They operate but briefly, if at all, in sight of the GI. But the so-called putt-putts are all over the place, on the

(Continued on page 37)

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Again Saxon Aircraft Radio Co., Inc., leads the field with a new and practical advancement. After months of testing and trying, we now offer to our customers the simplest yet most accurate navigation system available. . . . our new *Duo-Omni System for cross-bearing readings at the flip of a switch.*

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FOR highest standards of Cessna aircraft service, always stop at the sign of the Factory Authorized Cessna Sales and Service Dealer. The Cessna Authorized Service Shops listed on this page meet all factory requirements and offer Cessna owners special services which identify them as factory-approved establishments.

Flat-rate maintenance, for example, distinguishes these as outstanding Cessna Authorized Service Shops. Labor rates may vary with the locality, but each of the shops listed on this page features flat rates based on nationwide Cessna standards of repair and overhaul time work. Thus Cessna owners are always assured of efficiency, reasonable costs, genuine parts and accessories, and complete statisfaction.

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Champ's Flying Service
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El Paso, Texas

Clinch Flying Service
Municipal Airport
North Platte, Nebraska

Clinton Aviation Company
Stapleton Airfield
Denver, Colorado

Hair Flying Service
Harding Field
Baton Rouge, Louisiana

Mustang Aviation, Inc.
Mustang Airport
Dallas, Texas

Ragsdale Flying Service
Municipal Airport
Austin, Texas

Southwestern Skyways, Inc.
Ragle Airpark
Santa Fe, New Mexico

Kenneth Starnes Aviation Service
Adams Field; Little Rock, Arkansas

West Texas Flying Service
Midland Airpark
Midland, Texas

Yingling Aircraft, Inc.
Municipal Airport
Wichita, Kansas

Questions and Answers

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1. *All-metal construction? A must.*

2. *High cruising speed with economy? Definitely.*
Open it up side by side with any other new airplane under $12,000. You will get more miles per gallon at high cruising speed than anything else in its class. Check results of recent efficiency races.

3. *Big enough so 4 adults travel in comfort? Yes.*
Room for four adults to ride several hours in comfort, plenty of leg room in rear and front seats.

4. *Low noise level? Yes.*
Try conversing during flight from front to rear seats in normal tones, again the best.

5. *Abundant pay load? Yes.*
Carry four people, and baggage and gas for a 500-mile jump (full tanks of gas). You can do this safely in the Cessna, without exceeding the C.A.A. certified pay load of the airplane.

6. *Over-all reliability? Yes.*
Rugged construction, spring steel landing gear, proven power plant, built-in quality, backed up by years of experience building fine airplanes.

Examine the Cessna 170 from propeller to rudder—you will find outstanding quality throughout... very rugged construction... performance to easily handle the job.

During 1950, the Cessna 170 outsold all other four-place airplanes, regardless of price.

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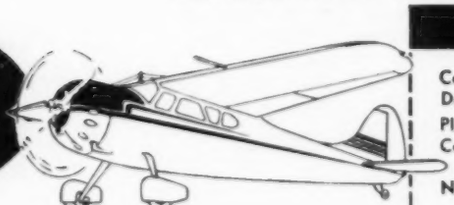

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For those who desire the ultra in omnigation, NARCO'S VTR-1 Omnigator has all the above features, PLUS ILS, marker beacon receiver, and 8-channel VHF transmission.

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Perfection in electronics

Questions and Answers for Airport Operators

Don't Be Arbitrary — There's Always the Mayor

QUESTION: What would you do if you were an airport manager and the Mayor allowed people to by-pass you and handled airport matters without reference to your wishes? I just had a telephone call from the Mayor telling me to fix up a lease for a small shop for a fellow who was told by me last week that we had no space for him. I don't think this man has enough capital to keep going and we already have a good shop.

ANSWER: Whoa. Wait a minute. Hold in position before you get high behind for a war with the Mayor. In the first place it seems to us you might sit down and figure out just what you may have done to make this shop man go over your head. You told him you had no space for him. Evidently you have or the Mayor wouldn't have told you to lease him some space. You tell us that he hasn't enough money to keep going. How can you be sure? We know a dozen prosperous operators who started in business in the Thirties literally on six bits and a prayer. And it's possible that your field could stand to have another shop. Certainly if it can't support a second shop, the new man would more than likely choose some other airport. Competition is sometimes a mighty good thing. After all, your airport is a public airport.

Perhaps your negative action had the effect of seeming to be arbitrary. If that was so, he had no choice but to go over your head. The Mayor sits over there in the City Hall to run the city's affairs as best he can. Everybody takes his troubles to him and his phone constantly breaks up his day's work and his meals and his sleep at home. If Granmaw Oakum's toilet won't flush she may call the Mayor at 3 in the morning and he has to listen. It's a citizen and a vote talking.

So your shop man came in and complained that he wasn't getting a reasonable hearing. Could it be the same thing has happened before? Maybe that's why the Mayor acted without calling you in. That isn't good for several reasons. It makes you feel a slight has been put on you and it makes your new tenant believe that he doesn't have to worry about you. He can always go higher up. The two of you have a built-in cause for friction. He knows he can't look to you for help and you know he can't last and you won't be interested in helping him give your airport a lasting and desirable service.

You asked us what to do. In this case it may be too late to do anything. If there was a really sincere reason for not renting the shop man space, the first thing you might have done was to write the Mayor a memo right after the interview telling him the action you had taken and your reasons for that action. He would then not have had the experience of being totally in the dark when the man went over your head. If your reasons were valid, no doubt he would have backed you up. If they weren't, he probably would have talked the matter over with you. As it worked out, he only heard the other fellow's side. That isn't good. Now that the deal is settled, make the best of it. Welcome the tenant and treat him the same as any other tenant. Two things came out of your experience. Jealousy of one's prerogatives may prove embarrassing and it always pays for an airport manager to keep his superiors informed as to his actions and his reasons for them.

Combining Parks with Airports

QUESTION: I hear a lot of generalities about recreational facilities at airports. But can you give me some ideas that might be usable in my town and what good would they do?

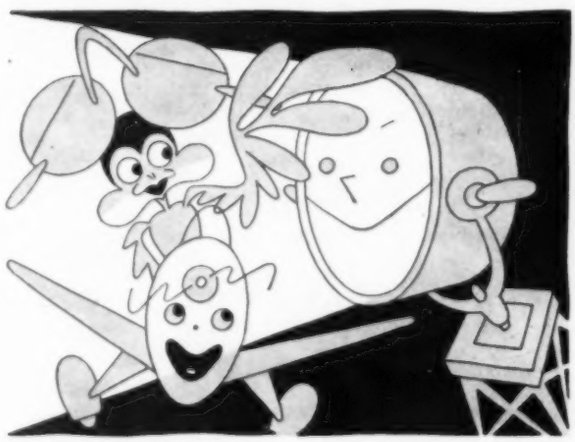
ANSWER: A few weeks ago your Question and Answer Man was heading toward Crystal City, Texas, aboard a Bonanza when he saw an invitingly cool green spot that turned out to be a swimming pool not very far from the brand-new runway of the Crystal City Airport. There is a golf course nearly completed. A clubhouse has been remodeled from a building on the airport. It has dining and other rooms for the convenience of the members. We hear that three hundred rounds of golf were played on the first day the new nine hole course was open at Mathis Field, San Angelo's Municipal Airport. At Clayton, New Mexico, a golf course will soon be built to augment the other recreational facilities now on Clayton's Airport.

At Guymon, Oklahoma, on a single area of ground about the size of a section, are an airport, golf course, driving-range, race track, stadium, country fair building, and a dog pound, the airport and recreation area. One road

OKLAHOMA IN OCTOBER

We will see you at the 1951 Conference on Airport Management and Operations at the University of Oklahoma, Norman, Oklahoma, October 11 and 12, 1951. Make your plans now to attend this, the year's most important conference on airport management.

Maybe you chaps weren't aware of it, but you came within an ace of losing those helpful airway beacons.



It's a fact, a discontinuance and disposal program was already under way by the CAA when the squawks began.

Even though the beacons aren't essential to the airlines, the CAA has now learned of their great importance to pilots of personal and small industrial planes who fly *without* all the latest navigational equipment.

We say, "Hot Diggity!" That friendly old flasher has kept us out of the pea patch plenty of times! Bravo—and long live the beacon!

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This time it's Gulf Aircraft Engine Oil—Series R—that wonderful, nondetergent, straight mineral lubricating oil for *radial* aircraft engines of all types!

This top-quality oil has the ability to maintain body at high operating temperatures! And—its high resistance to oxidation retards formation of sludge and carbon.

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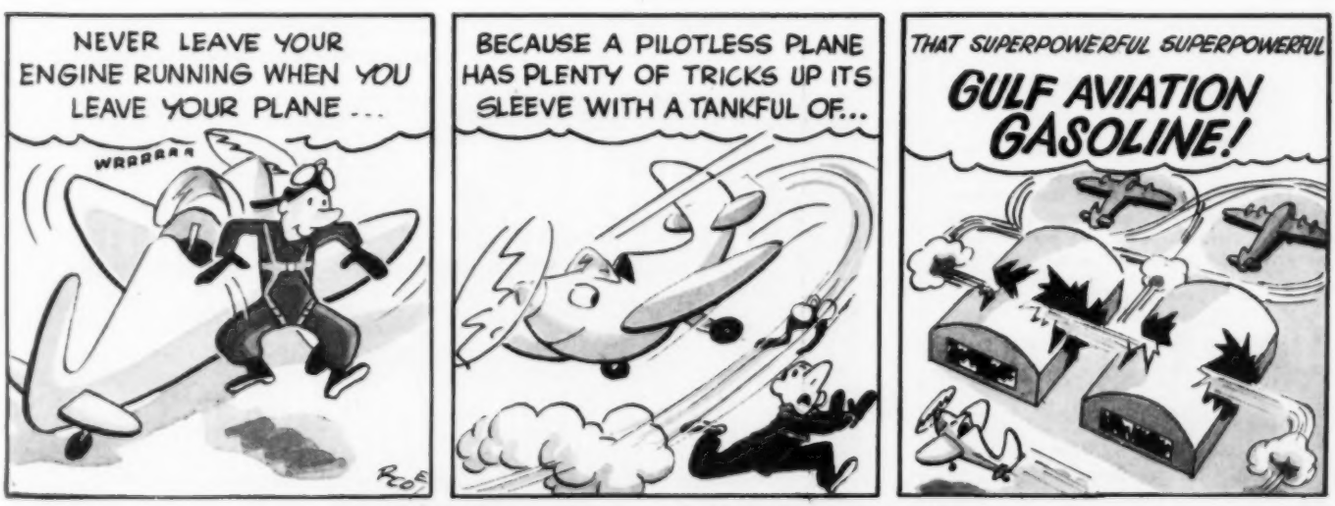
NEVER LEAVE YOUR ENGINE RUNNING WHEN YOU LEAVE YOUR PLANE...
WRRRRR
BECAUSE A PILOTLESS PLANE HAS PLENTY OF TRICKS UP ITS SLEEVE WITH A TANKFUL OF...
THAT SUPERPOWERFUL SUPERPOWERFUL
GULF AVIATION GASOLINE!

Gulf Oil Corporation . . . Gulf Refining Company

CESSNAS IN COMBAT

(Continued from page 31)

landing and taking off. Liaison strips are usually about 2,000 ft. long but

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ing-range, race track, stadium, country fair buildings and a dam now under construction will soon make a small lake there. The swimming pool at Laredo Municipal Airport is usually well patronized.

We talked to an airport planning engineer about this type of development. He's got a lot of savvy and here's the gist of what he says. While such facilities are built on or near airports, that doesn't mean they are designed for the small portion of the populace known as the flying public. They are for all the public. Generally throughout America cities and towns are showing a growing interest in recreation facilities. Healthy play is an adult requirement and is, it is believed, an essential in combating juvenile delinquency.

So, many towns, especially smaller ones faced with needs for recreation facilities, are combining the need with that of airports and building them together or adding one to the other. Good reasons exist for this view. Usually when land is acquired for an airport, the acreage acquired is in excess of the needs for strictly landing and building areas. This is due to several things. For example, protection of approaches or the irregular pattern of the landing area frequently leaves areas unused in the tracts which are purchased.

If such excess land exists, especially on close-in airports, it is natural for owning public agencies to look toward its use for recreation purposes rather than to contemplate spending money to buy additional land. We believe this is a desirable view for several reasons. If a small town were to acquire a park on one side of town and build an airport on the other, the park, serving many, would stand a much better chance of getting maintenance money than the airport serving comparatively few. However, if the two are in one package, the maintenance is more easily considered as one job and the standards of maintenance kept at a higher level.

There is saving, too, in the matter of water and other utility lines. One expenditure for these then serves both airport and recreation area. One road serves both. The buildings and facilities in many cases may do double duty. Hangars can be used for dances, office or administration buildings can house cafes, lounges and meeting rooms which can be used for recreation purposes after dark. Administration buildings can be used as a clubhouse, too, if the golf course is conveniently located.

Such joining of airports and public recreation in one package can be expected to bring about better public acceptance of the airport. For many of you pilots who have complaints that your local public airports are not kept up, it's an idea to think about. ★ ★ ★

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CESSNAS IN COMBAT

(Continued from page 31)

ground and in the air. They suffer the same mud and dust, the same enemy ground fire and the same local confusion as the guy with the grenade. "Big Friends" upstairs come and go, but the Army's own lightplanes base and operate with the GI, sticking around close to do the day-to-day dirty work of spotting enemy positions; directing artillery fire; calling in fighter strikes; finding and supplying ground units cut off from the main force; hopping staff officers, information or small equipment from post to post along the fronts.

River Bottom Strips

Liaison strips are seldom farther than five to ten miles from the fighting. If convenient, unprepared areas such as straight portions of a road, or a ten-acre patch, are utilized right in the midst of activity for emergency operations. It doesn't take much of a patch to put in a slow-flying liaison airplane.

Most lightplane strips in Korea are in river bottom lands. There are few other locations offering any level ground. But river bottom lands are usually extremely muddy when it rains and extremely dusty with blowing sand between rains.

Most of these prepared fields are one-strip affairs. Van personally saw only one field in Korea that had two strips. Prevailing winds have less to do with locating a strip than the level of the terrain and the lack of obstacles. As a result, there is a lot of cross-wind landing and taking off. Liaison strips are usually about 2,000 ft. long but extremely narrow, being about 50 ft. wide on the average.

People ask about the effects of altitude and heat on lightplanes in Korea. Van didn't see any strips at altitude. Being in river bottoms, most of them are near sea level. The biggest problems are mud, sand, obstacles such as hills off the end of strips and frequency of heavy up and down air currents. As for winds, 30 knots is considered a high wind. To meet these conditions, liaison pilots (the Army officially calls them "aviators") have what is known as the "Korean Technique." This consists of doing whatever necessary to get the airplane down safely.

Pilots Fly 100-150 Hrs. Month

A mission for a liaison pilot and observer usually lasts two to four hours. The daily utilization of liaison planes averages about six to ten hours per airplane. Pilots average 100 to 150 hours of front-line flying per month. Many of them now flying liaison missions have been flying in Korea for 12 months or so. That's a whole lot of hard flying in any man's army, and non-flying officers and enlisted men have the greatest respect for both the courage and hard work necessary to do it month in and month out.

These pilots range in age from 25 to 38 or 40 years old. Some are older. Most of them are Captains. A lot of them flew liaison planes in Germany during World War II. They tell Van Korea is worse, even though they have had no enemy air action to contend with. The weather is worse, the strips are not as good, the terrain is worse and the Communist disregard for life in sacrificing large numbers of troops against U. S. weapons makes the task worse.

Being trained in ground warfare before becoming pilots, these flying officers are exceptional in that they not only know the flying end of their

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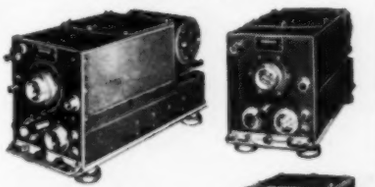
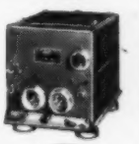
THE ARC TYPE 17
Adds two-way VHF communication. System includes tunable VHF receiver and a five-channel, crystal controlled VHF transmitter. As many as four of these transmitters may be installed providing up to 20 channels.

THE ARC TYPE 12





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All units of these systems are type certificated by the CAA. Installations for both single and multi-engine planes are made only by authorized agencies.

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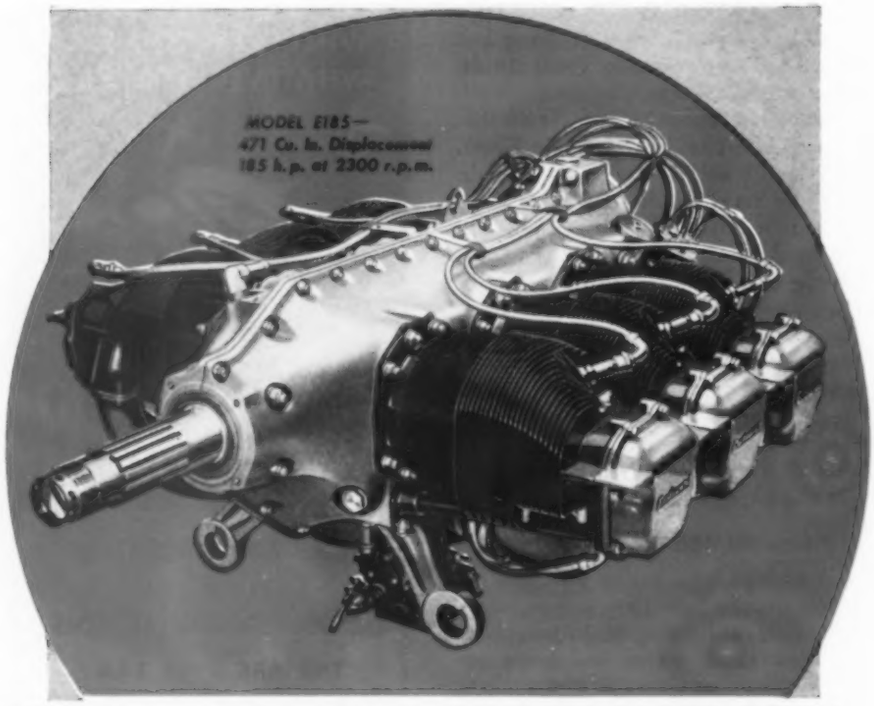
Communist 31 cal. bullet from ground fire struck this McCauley metal propeller on



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business but are experts in ground tactics, too. When a liaison pilot and his observer study the enemy's position, it's flying ability which gives them the advantage of observation from the air but it is ability in ground forces military tactics which enables them to interpret enemy ground movements and preparations, radio for counter measures which they can evaluate on the spot and then chart the progress of events from there.

Frequently an artillery unit directed by a liaison plane will radio, "We'll give you six rounds all right, but you get that airplane out of the way first!" The airplane responds, "Go ahead and fire, we'll have the airplane out of the way before your first round gets here!" They know what they're doing and that's how they get the job done in such a big way.

How Missions Are Flown

When a liaison plane spots enemy targets requiring fighter aircraft strafing or bombing, it calls first for a "Mosquito." This is the T-6's which the Air Force operates to control the operation of fighter planes in support of ground troops in local operations. But if a T-6 Mosquito is not available, the liaison plane stays and calls the fighters direct, talking them down to the enemy position or, if that is impractical, flying to the enemy position with the fighters following. Low-flying planes at high speed can not spot small targets as readily or as thoroughly as liaison planes. But liaison planes can put fast fighters into position for even the smallest and best-concealed targets—with deadly accuracy.

Most liaison flying is done at a couple thousand feet. Small arms ground fire is more dangerous at less height. Enemy units hesitate to open up on liaison planes because firing is a dead giveaway to position. When ground fire gets hot, however, the liaison pilot can do one of two things. He can stay at three or four thousand feet or he can dive and fly away from the fire at tree-top height. It isn't easy to track an airplane that low.

Sometimes unarmed liaison planes are hit. Van has seen them with ten-inch holes in their fuselage panels, for example. He has also seen them come back with small-calibre holes all over.

Although liaison pilots haven't been threatened by enemy aircraft in Korea, one pilot where Van was located said he had once seen a Russian-built MIG-15 flash by on the tail of a U. S. jet fighter. He didn't see much, however. They were gone in a twinkling at such speeds. A jet fighter would be at a decided disadvantage in attacking a slow-flying, highly maneuverable liai-

front about 15 days ahead of the

Communist 31 cal. bullet from ground fire struck this McCauley metal propeller on a Cessna, but failed to pierce it. Pilot didn't know of bullet until mechanic found the dent after landing.

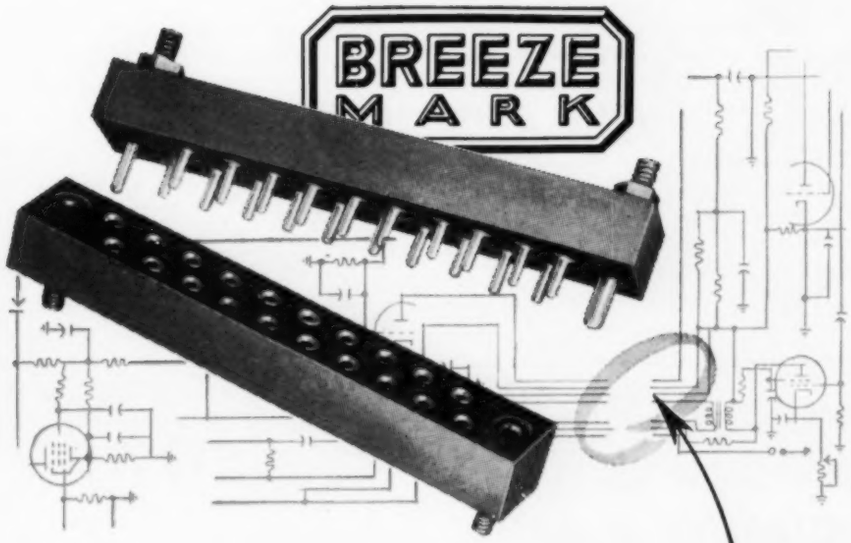
Butchered Cessna vertical fin was chopped by Navion L-17's propeller which got too close as two planes approached for landing. Both craft got in safely. Bottom photo shows a Cessna spring-steel landing strut actually bent, a rare occurrence. It happened when wheel was wedged in a ditch on landing.

son plane. An Army aviator can make a jet ace look awful silly by eluding his passes.

Van's tour in Korea began with the first shipment of Cessna L-19's. This L-19 is the newest development in liaison planes, being all-metal and powerful enough to carry all of the Army's necessary radio equipment and still perform from short, unprepared strips. Details are published with this article.

Planes Ahead of Schedule

The first shipment of L-19's arrived in crates at a base in Japan. Van arrived at about the same time and directed their assembly. While servicing instruction and facilities were being established, the pressure was growing for L-19 deliveries to the front. Cessna had delivered them to Japan and got the first L-19's into service at the



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front about 15 days ahead of the original schedule, which had been programmed months earlier when production orders were being placed.

The assembly of crated airplanes was going at a good rate when the 46th Ordnance Light Aircraft Maintenance Company was shipped to Korea from Japan while assembly was taken up by the U. S. Air Force for the Army Ground Forces.

The first flights over the combat line were made last March. They were worked with the 3rd, 24th and 27th Divisions while a second batch of L-19's was made ready to shove in behind them. From then on the L-19's began arriving in combat at a steady rate.

Here are the "boys who run the Air Section of the 8th Army in Korea." In group are Captains Botts, Davenport, Britt, Alexander, Andrews, Lafferty, Gardner, and Sullivan; Majors Lovett, Thompson, Lukema, Ramsey, Hoffman, and Anderson; and Lieutenant Colonels McMaken, Neumann, Taylor, and Smith.

When Van got there, ground units were operating L-4's, L-5's, L-16's and L-17's. The T-6's in Korea were operated by the Air Force. The Cessna L-19, ordered in large quantities, is replacing all but the L-17. This is the military version of the 4-place Ryan

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Navion. It and the L-19 are the only all-metal liaison planes in Korea. Vanderlip said he would like to pay a compliment right here to that L-17 Navion. Its nose wheel has proved surprisingly rugged in Korea and its flying characteristics are liked.

At first, the Cessna's spring-steel landing gear was a challenge to some liaison pilots. But as soon as they got onto its flexing, they found it to be a wonderful development to simplify cross-wind landings and reduce maintenance. But the thing liked most about the L-19 is all of its horsepower.

Plenty of Horsepower

World War II liaison planes used in Korea had difficulty getting out of short fields when the mud was bad. Pilots would have two or three men stationed at the end of the strip and they would shove to help start take-off runs. But with the L-19's Continental engine developing 213 horsepower for take-off, no helpers were needed. In fact, it wasn't necessary to get off the end of the strip. With all that power the L-19 flies off in less than 400 ft.

This horsepower has other advantages. The L-19 is cruised at 98 to 110 mph. At 2,000 rpm., only 29 per cent of the engine's rated power is used. At this power setting, fuel consumption is 6.3 gals. per hour. If the pilot wants to clear a hill or ridge, he always has plenty of power left and just hoists the nose and pours on more coal.

Liaison crews like the Cessna's manifold heaters, which really put out the BTU's, and its fresh air ventilation. It has twice the ventilation of a commercial Model 170, which is one of the most successfully-ventilated lightplanes on the market. They also like its roominess.

Good Engine Record

Only a couple of minor modifications have been necessary in the L-19 since it crossed enemy lines. One was to strengthen tail wheel brackets and the other was to strengthen fuselage stringers ahead of the landing gear struts.

The Continental engine has proved to be excellent. Van ran a survey on 100 L-19's in Korea at the front. These had amassed a total of 20,000 hours, individual planes ranging from 10 hrs. of use to 435 hrs. Among the 100 planes, there had been only three engine changes. Oil is changed every 30 hrs. except on dirty fields, where it is changed every 15-20 hrs.

Army staff officers as well as the pilots praise the L-19 for its performance and rugged stamina. The only suggestions for improvement made to Vanderlip were these: First, bullet-proof tanks are desired. Some armor plate around the seats would come in handy. Beyond this, the word from Korea is: "Give the ground forces more L-19's." They're on the way.

★ ★ ★

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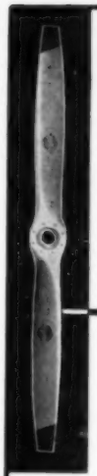

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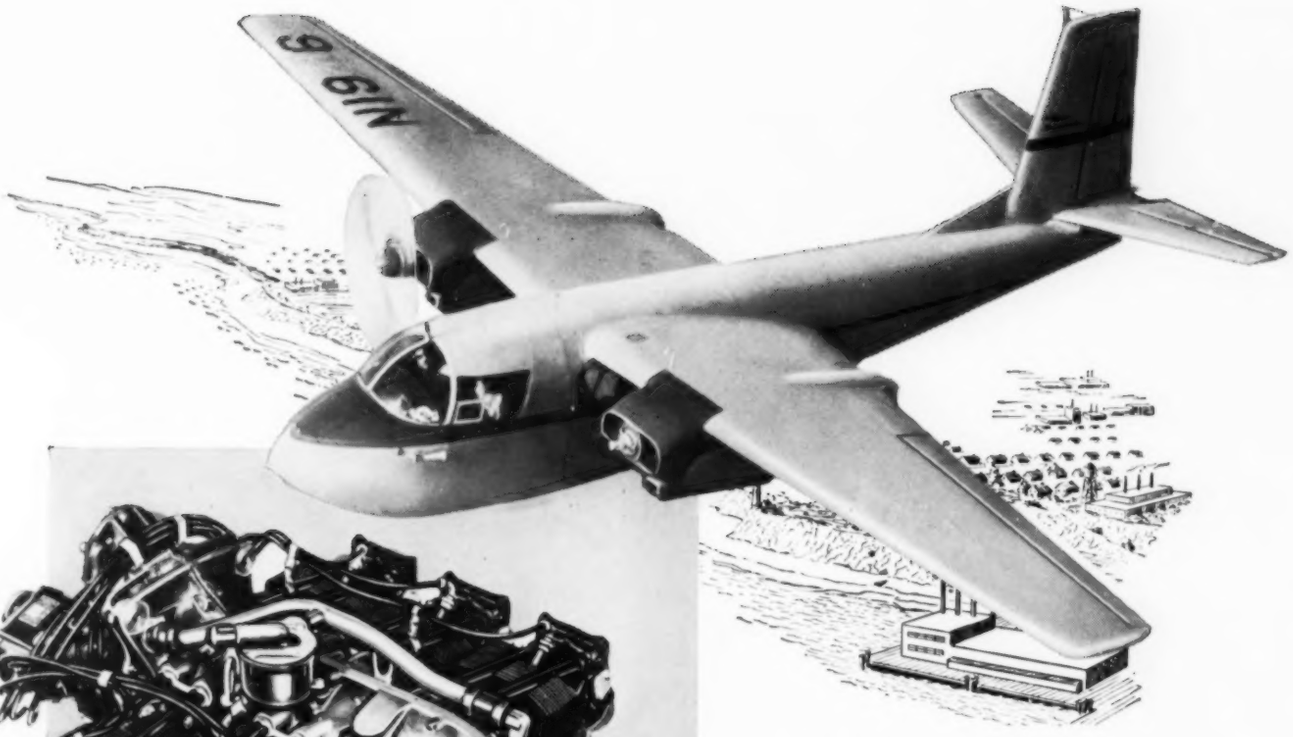

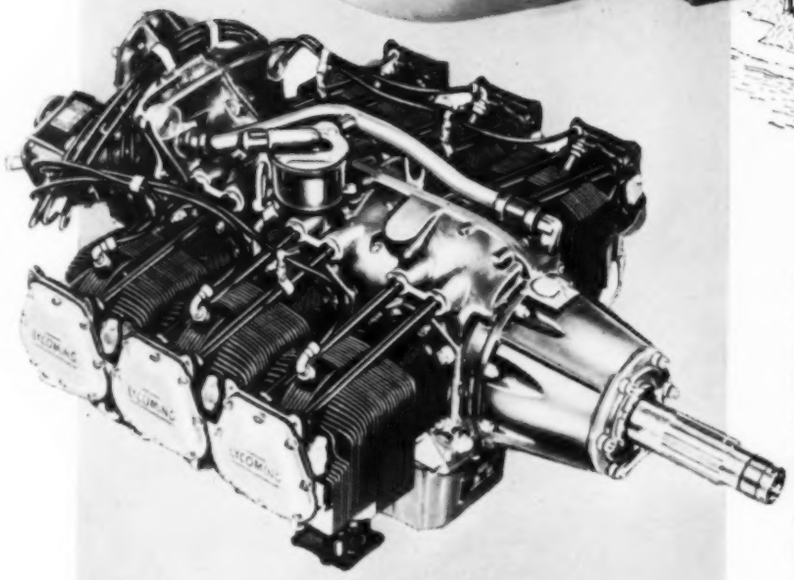

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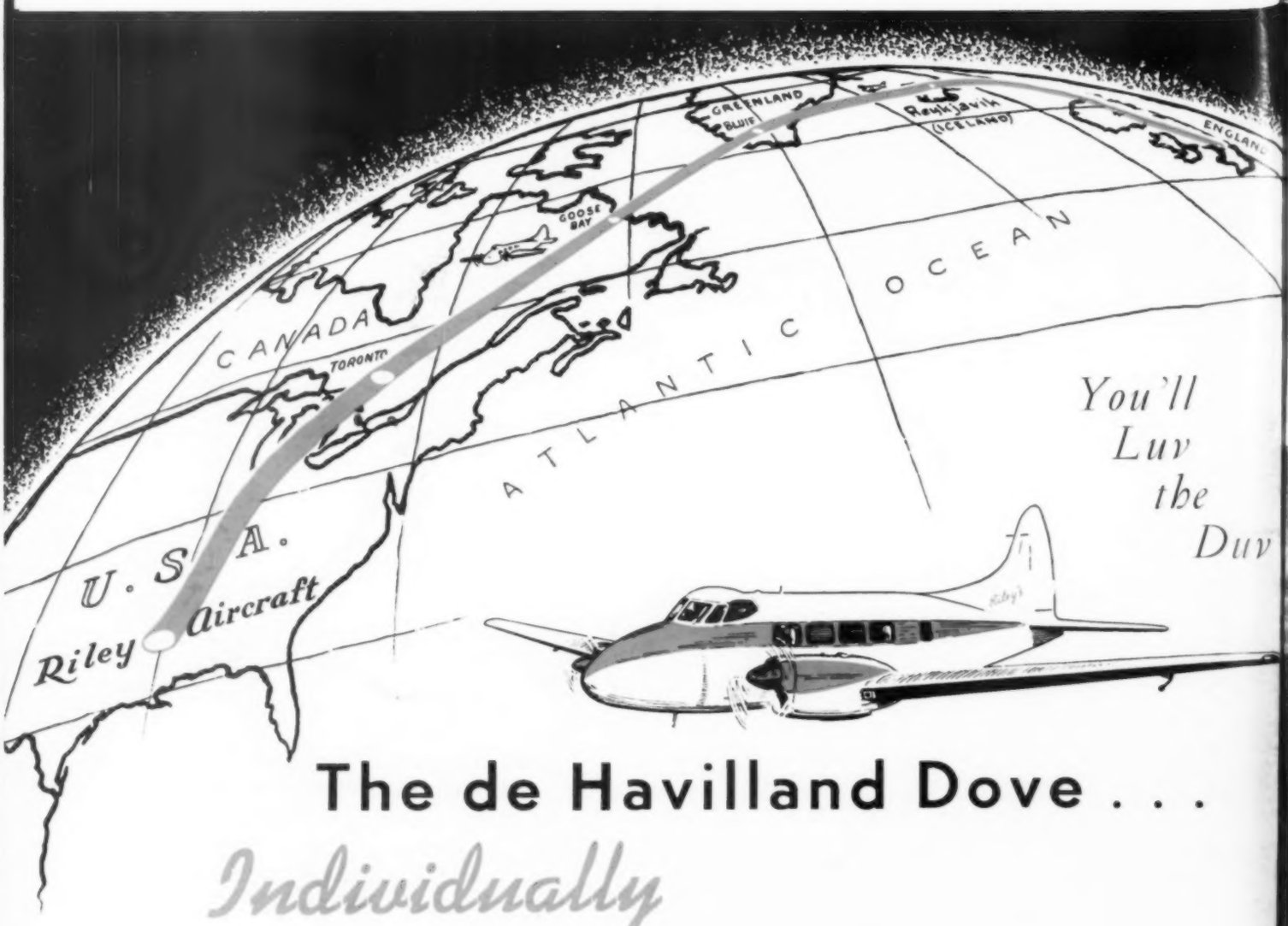

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